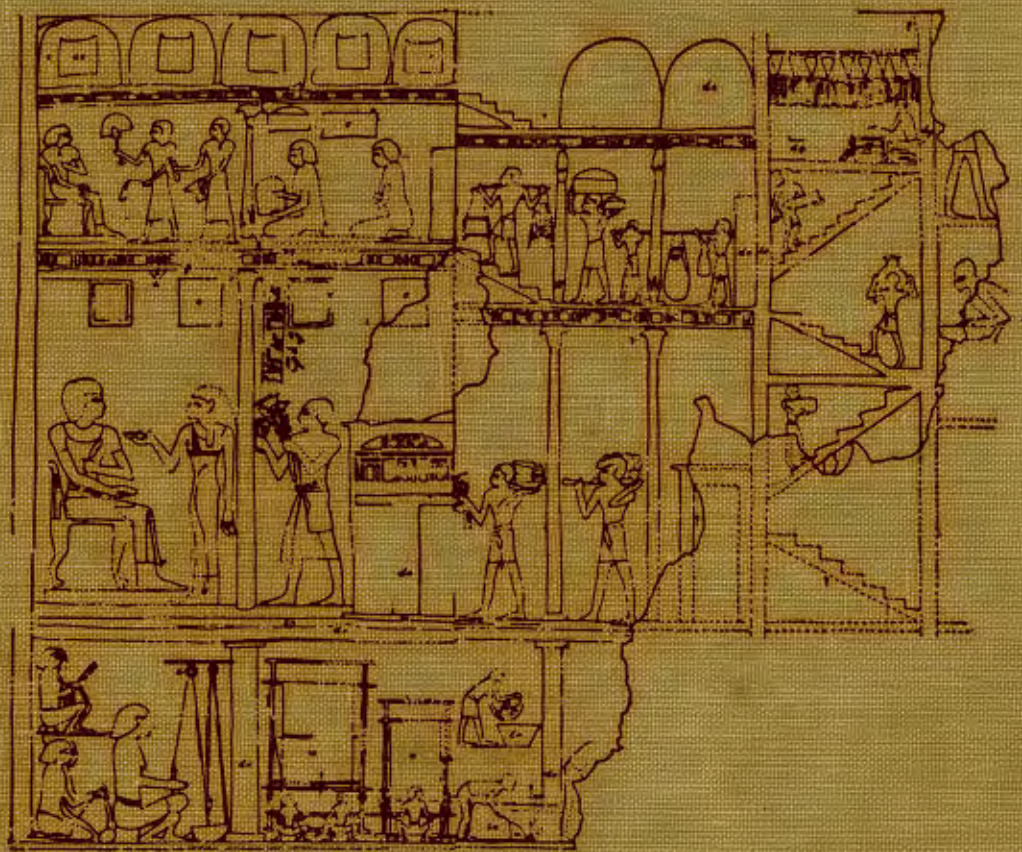


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STORY OF EGYPTIAN ARCHITECTURE: *The Empire*



CALIFORNIA

A HISTORY
OF EGYPTIAN
ARCHITECTURE

The Empire (the New Kingdom)

*From the Eighteenth Dynasty to the
End of the Twentieth Dynasty*

1580-1085 B.C.

COLOR PLATE I. *Restored perspective of the Harem pavilion of King Ay at Thebes (see p. 25).* The restoration is based on the mural in the tomb of Neferhotep in Western Thebes (see p. 25, fig. 11). That the pharaohs had special annexes for the ladies of their court is proved from the existence of the remains of such harem pavilions in the palaces at Malqata and 'Amarna. The information provided by the mural is necessarily restricted to what the painter could convey by means of his composite views of front and side elevations. The house is located at the rear of a garden that had sycamore trees and a kiosk on four papyriform columns. It is preceded by a porch on four tall slender papyriform columns painted green which shaded the large window of appearance that seemingly forms the only feature of the façade. The lateral elevation shows the entrance doorway, probably in pink granite, a row of small windows with vertical grating bars opening at the level of the lintel of the door and two large windows with mullion and colorful tracery on the upper floor. Red horizontal lines running at regular intervals relieve the monotony in the upper part of the lilac wall. Much attention is bestowed on focusing ornament on the front façade, a trend corroborated from the remains of the Ramesside temple palaces with windows of appearance in Western Thebes. Here the window opens in the upper part of a rectangular design framed by a band of rectangles in red, blue, and green derived from the torus molding, surmounted by a cavetto cornice and flanked by two papyriform columns carrying a second cavetto cornice. The wall beneath the opening is given an interesting texture imitating that of a reed partition with vertical stems and horizontal bindings, possibly in glazed tile, a material much used in the temples, palaces, and houses during the Empire.

PN 127 218

A HISTORY OF EGYPTIAN ARCHITECTURE

The Empire (the New Kingdom)

*From the Eighteenth Dynasty to the
End of the Twentieth Dynasty
1580-1085 B.C.*

By ALEXANDER BADAWY

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Preface

As promised, this volume appears only two years after the preceding one, *A History of Egyptian Architecture: The First Intermediate Period, the Middle Kingdom, and the Second Intermediate Period* (Vol. II). This relatively short period acknowledges in part the favorable reception met by the work among readers and reviewers.

The same care for clarity has been bestowed on the preparation of the drawings according to a uniform style, and to the redaction of accurate descriptions. The same method of research on literary and representational evidence has been followed, for the well-implemented architectural historian can derive much information from the Egyptian descriptions of architectural monuments, their murals, and their technical terms. As much importance has been awarded to dependable architectural perspectives restored after murals in private tombs and wall scenes in temples.

Photographic material has improved in both quality and quantity. To give some idea about the essential role of color in Egyptian architecture, color illustrations have also assumed more importance. Several of my colleagues among archaeologists and architectural historians find the colorist effect of my former restorations too bold. Yet, one added as an afterthought that Egyptian colors *were* gaudy. Even though some preconceived image may be shattered it is time, indeed, to realize that Egypt was not a country of gods and graves, but of lively people full of artistic sense and humor, who in their own words "liked life and hated death." Their ethics prescribed the paradox of dedicating a lifework to achieve an eternity of happiness. Yet theirs was not a sad life, nor were their palaces or houses gloomy. The murals in the tombs of the grandees of Thebes—capital of the world during the Empire—represent in their original gorgeous colors and elaborate patterns the decorations of the façades and internal halls of their palaces and houses. Though not built of stone "for eternity," as were the temples and tombs, this domestic architecture displayed much taste in the coloristic effect of its painting and faience inlays.

To avoid redundancy the glossary of architectural terms and the list of

pharaohs already printed in the preceding volume are not duplicated. It will be noted that while many Egyptian terms used during the Empire are the same as those used during the Middle Kingdom, their spellings, and probably their pronunciation, differ—a natural evolution after five centuries, even in so traditionalist a culture as that of Egypt.

Due acknowledgment accompanies illustrations, but it is still a pleasure to express my indebtedness to all those colleagues and friends who offered their collaboration. A mention for those who departed for the better world of the “justified,” and especially for Professor Vladimir Vikentiev, who was from 1936 to 1959 my professor, colleague, and endeared friend.

It is a pleasure to acknowledge the support of Professor K. Birkmeyer, Chairman of the Art Department, University of California at Los Angeles. A substantial contribution to meet the unexpected publishing expenses was made by Professor G. E. von Grunebaum, Director of the Near Eastern Center, University of California at Los Angeles. To him and his Center, our abiding appreciation.

Whatever elegance this publication achieves is to the credit of the University of California Press, and especially its Los Angeles Editor, Mr. R. Y. Zachary, its Managing Editor, Mr. J. Kubeck, and Mr. Geoffrey Ashton and Mrs. Teresa Joseph who went through the arduous task of reading the manuscript, as well as Mr. V. Ryan who read the proofs.

It is hoped that the next and final fourth volume dealing with Egyptian architecture during the Late Dynasties, the Ptolemaic Dynasty, and the Roman Age, will also appear without undue delay.

ALEXANDER M. BADAWY

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22. Temple palace of Ramses II at Deir el Medina in plan and restored perspective (Bruyère, *Deir el Medineh* [1935-1940], Quatrième Partie [Cairo, 1948], pl. 3).
23. First temple palace of Ramses III at Medinet Habu: 1, restored elevation of the window of appearance; 2, restored plan; 3, double false-door from the throne room; 4, restored cross section (Hölscher, *Medinet Habu*, III, 44-48).
24. Second temple palace of Ramses III in his mortuary temple at Medinet Habu: 1, axonometric view of plan; 2, royal bathroom; 3, throne dais in great hall (Hölscher, *Medinet Habu*, III, 49-59).
25. Plans of the two palaces at Deir el Ballas (Smith, *Art of Egypt*, figs. 51-53a).
26. General layout and detailed plan of the palace of Amenhotep III at Malqata, and details of the decoration (Smith, *Art of Egypt*, figs. 54-60; R. de P. Tytus, *Palace of Amenhotep III* [New York, 1903]).
27. Restored perspective of the bedroom of Amenhotep III in his palace at Malqata.
28. Rows of suites on a uniform plan in the palace of Amenhotep III at Malqata: plan and restored axonometric projection (Badawy, *Maison*, fig. 28).
29. Plan of the palace of Merneptah at Memphis (H. Ricke, *Der Grundriss des Amarna-Wohnhauses* [Leipzig, 1932], fig. 58).
30. Plan of the eastern edge of South City at 'Amarna, giving an idea of the loose layout of the streets (L. Borchardt, "Das ägyptische Wohnhaus im 14. Jahrhundert v. Chr.," in *Zeitschrift für Bauwesen* [Berlin], 66 [1916], fig. 1).
31. Contiguous mansions in the town of Ahmose at Abydos (E. R. Ayrton, C. T. Currelly, and A. E. P. Weigall, *Abydos III* [London, 1904], pl. LIII).
32. Plans of the fortified town of Sesebi in the Sudan (A. M. Blackman, "Excavations at Sesebi," *J.E.A.*, XXIII [1937], pls. XIII, XIX).
33. Plan of the second (*left*) and third stages of the workmen's city at Deir el Medina (B. Bruyère, *Deir el Medineh* (1934-1935) [Cairo, 1939], pls. VI, VII).
34. Section and plan of a typical house at Deir el Medina (Bruyère, *Deir el Medineh* (1934-1935), fig. 15).

35. View of the remains of a house showing the altar in the vestibule (Badawy, *Maison*, fig. 25).
36. Painted frieze from the altar representing the household genius Bes (Bruyère, *Deir el Medineh*, House N. E. X).
37. Typical clay oven from the Twentieth Dynasty (L. Borchardt, "Ein Brot," *A.Z.*, 68 [1932], fig. 2).
38. Fresco from Deir el Medina representing a dancing flute player (B. Bruyère, *Deir el Medineh* (1934-1935) [Cairo, 1939], pl. X, 3. J. Vandier d'Abbadie, "Une fresque civile de Deir el Medineh," *Revue d'Égyptologie*, III [1938], 26).
39. Plans of three houses (1-3) and grooves in the bedrock for reed huts at Medinet Habu (Hölscher, *Medinet Habu*, II, figs. 54-59).
40. General layout of Tanis (A. Lézine, "Le Temple du Nord a Tanis," *Kémi*, XII [1952], pl. 1).
41. Layout of the city of Pithom (E. Naville, *The Store-City of Pithom* [London, 1895], map).
42. Plan and cross section of contiguous houses between the two enclosure walls at Medinet Habu (Hölscher, *Medinet Habu*, IV, fig. 15).
43. Detailed restored elevation of screen wall in one of the contiguous houses (Hölscher, *Medinet Habu*, IV, fig. 16).
44. Plan and suggested restoration of the south administration building in the temple at Medinet Habu (Hölscher, *Medinet Habu*, IV, fig. 17).
45. Map of 'Amarna (H. W. Fairman, "Town Planning in Pharaonic Egypt," *Town Planning Review*, XX [1949], fig. 1).
46. Restored perspective of the main part of Central City at 'Amarna (J. D. S. Pendlebury, *The City of Akhenaten*, III [London, 1951], pl. I).
47. Plan of the servants' houses in the Great Palace at 'Amarna (J. D. S. Pendlebury, *The City of Akhenaten*, III, pl. XIIIa, 1).
48. Harem quarters in the Great Palace at 'Amarna: 1, plan; 2, isometric view of the north Harem, restored; 3, wall decoration; 4-5, pavement decoration in painting on plaster (J. D. S. Pendlebury, *The City of Akhenaten*, III, pls. XIIIa, XV, figs. 8, 10, 11).
49. The Great Palace at 'Amarna: 1, plan; 2, restored perspective of the broad hall; 3, painted pavement in the broad hall (J. D. S. Pendlebury, *The City of Akhenaten*, III, pls. XIV-XV, fig. 13).
50. Plan of the coronation hall in the Great Palace at 'Amarna (J. D. S. Pendlebury, *The City of Akhenaten*, III, pl. XIIIc).
51. Plan of the King's House and magazines, and detail of painted plinth in main hall (J. D. S. Pendlebury, *The City of Akhenaten*, III, pl. XVI).

52. Plan of the North Palace at 'Amarna (J. Whittemore, "Excavations at El-'Amarnah," *J.E.A.*, XII [1934], pl. II).
53. Details of bathroom and latrine with isometric view, restored, of bathroom ('Amarna) and two wooden closet seats (Thebes) (H. Rieke, *Der Grundriss des Amarna-Wohnhauses* [Leipzig, 1932], figs. 32-34; L. Borchardt, "Das altägyptische Wohnhaus," figs. 42, 43, 47).
54. Plan of villa 0.49.23 in South City at 'Amarna (E. Peet and L. Woolley, *The City of Akhenaten*, I, pl. I).
55. Plan of the official house of Panehsy and elevations of the shrine in the central hall (Central City; J. D. S. Pendlebury, *The City of Akhenaten*, III, pl. XI).
56. House R.43.1 at 'Amarna (S.E.): plan, isometric view of pavilion, and detail of cornice (J. D. S. Pendlebury, *The City of Akhenaten*, III, pl. XXIII, fig. 20).
57. Plan of the house of the vizier Nakht and restored perspective of the central hall (E. Peet and L. Woolley, *The City of Akhenaten*, I, pls. III, IV).
58. Restored N.-S. section of house V.37.1 (H. Frankfort and J. D. S. Pendlebury, *The City of Akhenaten*, II, pl. XVI).
59. Plan of house V.37.1 (H. Frankfort and J. D. S. Pendlebury, *The City of Akhenaten*, II [London, 1933], pl. III).
60. Restored plan of house T.36.36 and detail of the decoration of the beams (H. Frankfort and J. D. S. Pendlebury, *The City of Akhenaten*, II, pls. XIV, LV).
61. Plan of house T.36.36 and detail of painted decoration on beams from the central room and the north loggia.
62. Plan of houses T.35.9 and T.35.3 in the northwest quarter at 'Amarna (H. Frankfort and J. D. S. Pendlebury, *The City of Akhenaten*, II, pl. VII; supp., pl. XVII).
63. Restored perspective of the two houses T.35.3 and T.35.9 (H. Frankfort and J. D. S. Pendlebury, *The City of Akhenaten*, II, pl. XVII; see plan pl. VII).
64. House of Hatiay, T.34.1; 34.4 (H. Frankfort and J. D. S. Pendlebury, *The City of Akhenaten*, II, pl. XV).
65. Plan of the tax collector's complex of buildings at 'Amarna (H. Frankfort and J. D. S. Pendlebury, *The City of Akhenaten*, II, pl. XIII).
66. Plan of the workmen's village in 'Amarna East (E. Peet and L. Woolley, *The City of Akhenaten*, I, pl. XVI).
67. Detail of some of the houses in the workmen's village (E. Peet and L. Woolley, *The City of Akhenaten*, I, pl. XVI).
68. Restored sketches of a street and the main hall of a workman's house in the workmen's village (L. Veltheim-Lottum, *Kleine Weltgeschichte des städtischen Wohnhauses* [Heidelberg, 1952], pp. 90-91).
69. Cross section of roof in house No. 11 in East Street at 'Amarna (E. Peet and L. Woolley, *The City of Akhenaten*, I, fig. 6).

70. Detail of a stairway upon beams (E. Peet and L. Woolley, *The City of Akhenaten*, I, pl. XVII, 4).
71. Painted pilaster from the workmen's village, No. 9, Main Street (E. Peet and L. Woolley, *The City of Akhenaten*, I, pl. IX).
72. Plan of contiguous houses in the suburb of Hagg Qandil at 'Amarna, 0.49.6 (Badawy, *Maison*, fig. 20).
73. Plans of three houses of "priests on duty" in the south corner of the court of the Sanctuary of the Great Temple (J. D. S. Pendlebury, *The City of Akhenaten*, III, pl. VIII).
74. Plan of clerks' houses (J. D. S. Pendlebury, *The City of Akhenaten*, III, pl. XX).
75. Layout of the magazines between the King's House and the Great Temple (J. D. S. Pendlebury, *The City of Akhenaten*, III, pls. XII, XVIII).
76. Magazines of (1) the Great Palace and of (2) the sanctuary and priests' quarters (J. D. S. Pendlebury, *The City of Akhenaten*, III, pls. XIII, XVI).
77. Plan of paired silos at 'Amarna (W. Fl. Petrie, *Tell el Amarna*, pl. XLI).
78. Plans and sections of ovens in houses at 'Amarna (L. Borchardt, "Ein Brot," *A.Z.*, 68, pl. IV).
79. Plans of the ground floor and the upper floor in house No. I in the fortress at Kuban, and details of springing of arches and fire pan (W. B. Emery and L. P. Kirwan, *The Excavations and Survey between Wadi es-Sebua and Adindan, 1929-1931* [Cairo, 1935], pl. VI).
80. Plans of a large mansion (upper figure) in the town of Mi'm and magazines outside the town (G. Steindorff, *Aniba II* [Glückstadt, 1937], fig. 3, Blatt 8).
81. Representation of a court with silos from the tomb of Pehsukher (Badawy, *Dessin Architectural*, fig. 147).
82. Adjacent silos surmounted by a platform (Badawy, *Dessin Architectural*, fig. 149).
83. Heaps of grain on a circular platform within copings (Badawy, *Dessin Architectural*, fig. 150).
84. Typical façades of storerooms in the temple of Amun from the tomb of Rekhmire' (Badawy, *Dessin Architectural*, fig. 151).
85. Plan of three adjacent magazines from the tomb of Amenmose (Badawy, *Dessin Architectural*, fig. 152).
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89. Suggested plan of the magazines of the temple of the Aten at 'Amarna, from the representations (Badawy, *Dessin Architectural*, fig. 156).

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91. Plan of the chancery office under Ramses II, from the tomb of Tjoy and its interpretation (Badawy, *Dessin Architectural*, fig. 158).
92. Murals representing Nakht's wine press (N. de G. Davies, "Akhenaten at Thebes," *J.E.A.*, IX [1923], pl. XXVI), and Parennefer's wine press and vine (*Ibid.*, pl. XXVI).
93. Plan of the temple and the temple palace of Ay, with additions by Horemheb at Medinet Habu (Hölscher, *Medinet Habu*, II, fig. 95).
94. Plan of some magazines of the temple of Seti I at Abydos and restored perspective of the court (E. Ghazouli, "The Palace and Magazines attached to the Temple of Sety I at Abydos and the façade of this Temple," *A.S.A.*, LVIII, fig. 3).
95. Plan of the magazines of the Ramesseum (Hölscher, *Medinet Habu*, III, pl. 10).
96. Plan of the dependencies around the temple of Ramses III at Medinet Habu (Hölscher, *Medinet Habu*, III, fig. 34).
97. Plans and sections of two wells in the mortuary temple of Ramses III at Medinet Habu (Hölscher, *Medinet Habu*, III, figs. 42-43).
98. Plan and section of a large silo (before Ay) and series of six ovens (before Ramses III) at Medinet Habu, and paintings from the tomb of Ramses III representing two ovens (Hölscher, *Medinet Habu*, II, figs. 62-63; Borchardt, "Ein Brot," *A.Z.*, 68, pl. IV).
99. Representation of the pylon of the Gem-Aten from the tomb of Meryre' at 'Amarna (N. de G. Davies, *Rock tombs of El Amarna* [London, 1903], I, pl. XXVII).
100. Representation of the pylon of the Sanctuary from the tomb of Mahu at 'Amarna (N. de G. Davies, *The Rock Tombs of El Amarna*, IV, pl. XX).
101. Plan and elevation of the Great Temple at 'Amarna from the tomb of Meryre' showing from the bottom upward: the entrance portal and court, the façade of the temple pylon, the great altar court, a second court, a third court with its portico, a fourth court, and part of the fifth court bordered by eighteen cells (N. de G. Davies, *The Rock Tombs of El Amarna*, I [London, 1903], pl. XII).
102. Plan with rabatted elements of the Sanctuary, from the tomb of Ahmose (N. de G. Davies, *The Rock Tombs of El Amarna*, III, pl. XXX).
103. Egyptian low relief representing the pylon of Herihor on the temple of Khonsu at Karnak (Badawy, *Dessin Architectural*, fig. 220).
104. Restored view of the device for fixing flagstaffs (Badawy, *Dessin Architectural*, fig. 227).
105. Painting representing the pylons of Theban chapels (Badawy, *Dessin Architectural*, fig. 223a).
106. Representation of the temple of Amun from the tomb of Neferhotep (Badawy, *Dessin Architectural*, fig. 226).

107. Egyptian plan of a temple at Heliopolis and its interpretation (H. Ricke, "Eine Inventartafel aus Heliopolis," *A.Z.*, 71 [1935], fig. 7).
108. Egyptian project for a landing quay at Thebes (Badawy, *Dessin Architectural*, fig. 238).
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113. Layout of Tanis (P. Montet, *La Nécropole royale de Tanis, I. Les Constructions et le tombeau d'Osorkon II à Tanis* [Paris, 1947], figs. 1, 3).
114. Restored plan of the Northern Temple at Tanis (A. Lézine, "Le Temple du Nord à Tanis," *Kémi*, XII [1952], fig. 1).
115. Plan, elevation, and details of obelisks at Tanis (P. Montet, "Les Obélisques de Ramses II," *Kémi*, XI [1950], fig. 1).
116. Details of gateways in girdle wall of Tanis (J. L. Fougerousse, "Etudes sur les constructions de Tanis," *Kémi*, V [1935], fig. 11).
117. Constructional details from Tanis (J. L. Fougerousse, "Etudes sur les constructions de Tanis," *Kémi*, V [1935], figs. 10, 18, 19).
118. Restored plan and front façade of the temple of Herishef at Ehnasya, and palmiform granite capital of the portico (W. Fl. Petrie, *Ehnasya* [London, 1905], pls. VIII-X).
119. Sketch plan of some temples at Memphis (W. Fl. Petrie, *Memphis I* [London, 1909], pl. I).
120. Plan of the western hall (Ramses II) in the temple of Ptah at Memphis (W. Fl. Petrie, *Memphis I* [London, 1909], pl. II).
121. Imitation of three rows of cord at the bottom of shafts in the columns of Kha'mwas (temple of Merneptah at Memphis) (W. Fl. Petrie, *Memphis I* [London, 1909], pl. XXV).
122. Plan of the desert altars, east of North Suburb at 'Amarna (H. Frankfort and J. D. S. Pendlebury, *The City of Akhenaten*, II [London, 1933], pl. XXVI).
123. General layout of the Great Temple at 'Amarna (J. D. S. Pendlebury, *The City of Akhenaten*, III, pl. I).
124. Restored bird's-eye view and plan of the sanctuary of the Great Temple at 'Amarna (J. D. S. Pendlebury, *The City of Akhenaten*, III, pls. VIII, IX).
125. Restored plan and isometric view of part of the Per-Ha'i and Gem-Aten (J. D. S. Pendlebury, *The City of Akhenaten*, III, pls. IV, VI).
126. General layout and restored plan of the sanctuary of the Royal Temple at 'Amarna (J. D. S. Pendlebury, *The City of Akhenaten*, III, fig. 18, pl. I).

127. The Maru-Aten: 1, plan; 2, restored cross section of the kiosk island; 3, detailed plan and section of part of the tanks; 4, painted pavement from the water court (E. Peet and L. Woolley, *The City of Akhenaten*, I, pls. XXIX, XXX, XXXII, XXXVII).
128. Perspective of second hypostyle hall, of one of the chapels, and plan of the temple of Seti I at Abydos (J. Capart, *L'architecture* [Brussels, 1922], pls. 125, 127; Steindorff, *Egypt (Baedeker)*, p. 252).
129. General layout, plan, and section of the cenotaph of Seti I at Abydos (H. Frankfort, *The Cenotaph of Seti I at Abydos* [London, 1933], pls. I, II, III).
130. Plan of the temple of Ramses II at Abydos (Porter-Moss, *Bibliography*, VI, 32).
131. Plan of the temple at Luxor, restored front, and details of columns from the (1) hypostyle hall, (2) processional colonnade, and (3) forecourt of Ramses II (P. Lacau, *Mémoires de l'Académie des Inscriptions et Belles-Lettres* [Paris] XLIII, 2, pp. 77 ff.).
132. General layout of the temples at Karnak (H. Chevrier, "Plan d'ensemble de Karnak," *A.S.A.*, 36 [1936], pl. I).
133. The Great Temple of Amun at Karnak: plan, restored perspective of the hypostyle hall, and of the tribune, and detail of an open papyriform capital from the hypostyle hall (H. Chevrier, *A.S.A.*, 36 [1936], pl. I).
134. Plan of the Festival Hall of Thutmose III and perspective of the upper part of the hall (Porter-Moss, *Bibliography*, II, 40; S. Clarke and R. Engelbach, *Ancient Egyptian Masonry* [Oxford, 1930], fig. 174).
135. Restored sectional bird's-eye view, plan, and view of the court of the temple of Khonsu, Central Group at Karnak.
136. Plan of the temple of Ptah, Central Group at Karnak (Porter-Moss, *Bibliography*, II, 64).
137. Connection between the Great Temple of Amun and that of Mut at Karnak (H. Chevrier, *A.S.A.*, 36 [1936], pl. I).
138. Temple of the jubilee of Amenhotep II, Central Group at Karnak (L. Borchardt, *Ägyptische Tempel mit Umgang* [Cairo, 1938], figs. 21-22).
139. Plan of the temple of Mut, Southern Group at Karnak.
140. Plan of the temple of Kamutef at Karnak (H. Rieke, *Das Kamutef-Heiligtum Hatshepsuts und Thutmoses' III in Karnak* [Cairo, 1954], pl. 2).
141. Plan of the temple of Ramses III, Southern Group at Karnak (Porter-Moss, *Bibliography*, II, 96).
142. Plan of the temple of Amun-Re-Montu at Karnak North and details of a sliding door (C. Robichon and L. Christophe, *Karnak-Nord, III, 1945-1949* [Cairo, 1951], pls. XLI-XLII).
143. Plan of the temple of Thot at El Kab (Fondation Egyptologique Reine Elisabeth, *Fouilles de El-Kab: Documents* [Brussels, 1940-[1954]], pls. 7-8).

144. Plan of the temple of Nekhebet, details of its columns, and plan of the chapel of Thot at El Kab (Porter-Moss, *Bibliography*, V, 186).
145. Plan and section of the temple of Amun, plan of the temple of Hathor, and details of wall paintings at Deir el Medina (B. Bruyère, *Deir el Medineh (1935-1940)* [Cairo, 1948], pls. 1, 3, figs. 53, 67).
146. Plan of the temple at 'Amada (H. Gauthier, *Le Temple d'Amada* [Cairo, 1913-1926], pl. a).
147. Plan and section of three adjacent temples and plan of the Aten temple at Sesebi in the Sudan (A. Blackman, "Preliminary Report on the Excavations at Sesebi, Northern Province, Anglo-Egyptian Sudan, 1936-37," *J.E.A.*, XXIII [1937], pl. XIV).
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149. Restored plan of the temple in the fortified city of Mi'm and detail of a palmiform capital (G. Steindorff, *Aniba II*, fig. 1, Blatt 8).
150. Plan of the temple of Tut'ankhamun at Faras (Vandier, *Manuel*, II, fig. 454).
151. Plan of the temple at Buhen (D. Randall-Maciver and L. C. Woolley, *Buhen* [Philadelphia, 1911], pp. 84-94).
152. Plan and section of the temple at Semna, and restored plans of the first, second, and third stages (L. Borchardt, *Altägyptische Festungen an der zweiten Nilschnelle* [Leipzig, 1923], fig. 7, Blatt 21).
153. Plan and section of the temple at Kumma (D. Dunham, *Semna, Kumma* [Boston, 1960], pls. XVI, XVIII).
154. Plan of the temple of Amenhotep III at Soleb (Vandier, *Manuel*, II, fig. 457).
155. Plan of the temple of Amun-Re' at Kawa, and detail of a fluted column (L. Macadam, *The Temples of Kawa*, II [London, 1955], pl. 4, fig. 4).
156. Painting from the tomb of Ipuw representing a pteripteral chapel (N. de G. Davies, *Two Ramesside Tombs at Thebes* [New York, 1927], pl. XXIX; Smith, *Art of Egypt*, pl. 162a).
157. Sketch on an ostrakon representing a pteripteral temple, and interpretation (Badawy, *Dessin Architectural*, fig. 242).
158. Temple at Wadi Halfa West: plan and restored façade of chapel (L. Borchardt, *Ägyptische Tempel mit Umgang* [Cairo, 1938], Blatt 11, fig. 16).
159. Plan of the temple of Hathor at Deir el Medina (B. Bruyère, *Deir el Medineh (1935-1940)* [Cairo, 1948], pl. 2).
160. Plan and section of a temple with peristyle at 'Amada (L. Borchardt, *Ägyptische Tempel mit Umgang* [Cairo, 1938], Blatt 13).
161. Restored plans and elevation of pteripteral chapels: 1, El Kab (Thutmose III); 2, Sacred Lake at Karnak (Thutmose III); 3, Elephantine South; 4, Kuban (Amen-

- hotep III) (L. Borchardt, *Ägyptische Tempel mit Umgang* [Cairo, 1938], fig. 27, Blatt 20-21).
162. Small temple at Medinet Habu: restored perspective, plan as completed by Thutmose III, and project of Hatshepsut (Hölscher, *Medinet Habu*, II, pl. 4, fig. 41).
163. Plan and perspective of the Speos Artemidos at Beni Hassan (Porter-Moss, *Bibliography*, IV, p. 150; G. Maspero, *Histoire ancienne*, II, [Paris, 1897], 349).
164. Rock temple of Horemheb at Gebel Silsila (Porter-Moss, *Bibliography*, V, 209).
165. Plan, section, and perspective of the rock temple at Wadi el Niyah dedicated by Seti I to Min (H. Gauthier, "Le temple de l'Ouadi Miyah (El Knais)," *B.I.F.A.O.*, XVII [1920], pl. 20, pp. 1-38).
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167. Section and plan of the rock temple at Garf Hussein (G. Maspero, *Les Temples immergés de la Nubie. Documents. Première Livraison* [Paris, 1912], pls. XXII-XXIV).
168. Plan of the rock temple at Wadi el Sebu'a, and perspective of a sphinx and of a pillar with statue (H. Gauthier, *Le temple de Ouadi es-Siboua* [Cairo, 1912], II, pls. a, VI, XXXVIII).
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170. Plan of the rock temple of Amun-Re' and Thot at Abahuda, Gebel Adda (Porter-Moss, *Bibliography*, VII, 120).
171. Façade and plan of the Great Temple of Re'Horakhty at Abu Simbel.
172. Elevation, plan, and perspectives of the small rock temple of Hathor at Abu Simbel.
173. Plan of the temple of Hathor at Serabit el Khadem (from pylon eastward) by Hatshepsut and Thutmose III, and detail of a Hathoric pillar of Thutmose III (right) and Amenhotep III (left) (W. Fl. Petrie, *Researches in Sinai* [New York, 1906], figs. 95, 103, map 4).
174. Plan of the shrine of Queen Tetisheri at Abydos (E. R. Ayrton, C. T. Currelly, and A. E. P. Weigall, *Abydos III* [London, 1904], pl. LI).
175. Plan of the mortuary temple of Queen Tetisheri at Abydos (E. R. Ayrton, C. T. Currelly, and A. E. P. Weigall, *Abydos III*, pl. LI).
176. Layout of the mortuary temple of Queen Hatshepsut at Deir el Bahari (H. E. Winlock, *Excavations at Deir el Bahri* [New York, 1942], cover).
177. The mortuary temple of Queen Hatshepsut: 1, restored bird's-eye view; 2, plan; 3, end of the balustrade of the upper stairway; 4, end of the balustrade of the lower stairway; 5, palace façade paneling on south retaining wall; 6, portico of Anubis chapel; 7, side and front elevations of a Hathoric capital from the Hathor chapel.

178. Reconstruction of an Osiride statue of Hatshepsut at the southeast end of the lowest portico of the mortuary temple (Winlock, *Excavations at Deir el Bahri*).
179. Restored plan and elevation of the mortuary temple of Thutmose III at Sheikh 'Abd el Gurna (H. Ricke, *Der Totentempel Thutmoses' III* [Cairo, 1939], pls. 5, 7).
180. Restored plan of the mortuary temple of Thutmose IV (H. Ricke, *Der Totentempel Thutmoses' III*, pl. 11).
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I

The Influences

Egypt's civilization was never to surpass the heights it attained in the first five centuries of the New Kingdom, properly called the Empire on account of the extension of her power and her culture over many foreign countries. This period marked a new era in architecture, which was now subjected to new influences, although they did not necessarily result in a higher level of achievement than in the past.

GEOGRAPHICAL

The victorious Egyptian armies subdued foreign lands, and the frontiers of the Empire were advanced as far as the Euphrates to the east and the Fourth or Fifth Cataract to the south. Tribute was flowing in and substantial riches were accumulated, resulting in a wider scope for official programs of architecture in Egypt, especially for temples and temple palaces, and abroad for fortresses and fortified cities. The routes were free for trade expeditions and interrelations with other prominent cultures, such as the Mesopotamian (Eighteenth Dynasty), which was as old as the Egyptian if not older, the Aegean (Eighteenth Dynasty), and the Indo-European Hittite (Nineteenth Dynasty). Indirectly, the maintenance of such relations widened the scope of military architecture because numerous fortresses and trading posts had to be built abroad. Influences from foreign military architectures, mainly the Syrian, were felt in Egypt (Medinet Habu).

New customs led to new trends in architecture, whether these were directly borrowed, as were the "apadana" type of columned hall and the ramps on either side of a doorway ('Amarna), or gradually evolved.

GEOLOGICAL

Tribute from foreign vassals acquainted the Egyptians with new materials and new technical possibilities. At the same time the local quarries and those in remote districts, such as Sinai for turquoise and copper and Nubia for gold, were exploited with renewed intensity. The pharaohs were directly interested in these resources, especially the gold mines, and some of them boasted of having provided for the welfare of the workmen by digging wells and even building settlements in far-off desert locations. Seti I inspected the mountainous region east of Edfu and Redesiya and ordered a well to be dug and a settlement with a temple to be built. Similarly, a well 64 meters deep was excavated by Ramses II in the mountain on the road to the gold mines east of Wadi Alaki in Nubia, "furnishing water every day as in the valley of the Nile."¹ The civic sense that had become apparent even at the beginning of the Middle Kingdom proved to be a major item in the politics of the pharaohs, who no doubt were alive to the propaganda value inherent in their sponsorship of various civic schemes. The ever increasing requirements of the architectural programs of the court necessitated an intensified working of the quarries and the mines: huge monoliths for obelisks, statues, and columns; and gold for overlaying wooden doors, jambs, and pavements as well as for furniture and jewelry.

RELIGIOUS

The promotion of the god Amun as chief deity by Amenemhat I some four centuries earlier had resulted in the supremacy of his cult and clergy. The priests gathered great riches through continuous endowments from the pharaohs and consequently their power increased even to compete with that of Pharaoh himself. The intermarriage of Egyptian pharaohs and Mitannian princesses was possibly responsible for the short-lived favor that Re', the sun god, presumably equated with some similar deity in Mitanni, enjoyed at the court together with Amun. Amun-Re' was still the official designation of the deity adored by Amenhotep III. A courageous attempt to break away from the encroaching supremacy of Amun and the political power of his clergy was made by the idealist pharaoh Akhenaten, by promoting the cult of the sun

disk Aten and governing the country from a capital he founded in the desert in Middle Egypt. This also meant new types of temples, hypaethral chapels, and monumental altars built not only at 'Amarna, the new capital, but also in such far-off outposts as Sesebi in the Sudan. But his successor reverted to Amun-Re' of Thebes. This ideological movement, however, with its political incentive did have a momentary influence on culture in general and on the arts in particular. There is a conspicuous trend toward naturalism and lifelike representation with perhaps some direct inspiration from Mesopotamia in architectural achievements. By the end of the Twentieth Dynasty the balance of political power had definitely swung back in favor of Amun-Re' at Thebes, and it was a general who happened to be also one of his high priests who mounted the throne and founded the Twenty-First Dynasty.

The temples had an elaborate system of dependencies ranging from housing settlements for priests, refectories, chapels, processional avenues, colleges, and archives to such lesser types of buildings as farm estates with granaries, storehouses, stalls, stables, farmyards, and factories. An excellent example of the power wielded by an administrator of such an estate is afforded by the career of Senmut, the Steward of Amun, who was called upon to assume such important roles as Steward of Queen Hatshepsut and her daughter, Director of the Works of the King, and a few other posts. This rise in his influence, possibly enhanced by his personal capability, was in no way connected with his priestly titles but can be ascribed indirectly to the growing power of Amun.

In the Old and Middle Kingdoms, scenes representing the victories of Pharaoh occurred only in restricted areas of the temple. During the Empire the external walls are filled with such scenes. The figure of the pharaoh is on a heroic scale, and the various phases of whole campaigns are pictured. Ramses II, who narrowly escaped destruction at the battle of Qadesh in Syria, caused that "victory" to be commemorated on the walls of his temples at Abydos, at Luxor, at Karnak, at Abu Simbel, and in the Ramesseum (Thebes West). The scenes are usually located on the exterior, on the pylons or the outer walls, but also in the hypostyle hall of the rock-cut temples (Abu Simbel, Derr[?]). The same memorable event was celebrated in the official records and in a poem copied by the scribe Pentawer. This literature as well as the scenes on the temple walls had no direct religious purport but rather was intended to enhance the pharaoh's power at home and in Nubia. The temple was used for

both royal propaganda and the search for personal popularity. Besides these scenes accessible to the populace, there were, in front of the pylons, colossal statues of the pharaoh which were thought to answer the prayers of the people, for the pharaoh had become the mediator to the gods and the colossal statues were more accessible than the sacred ones hidden in the sanctuary. The temple had become a most useful instrument for internal politics at the court.

Not only were the external walls carved with extensive low reliefs and painted in gaudy colors, and colossi erected in front of the pylon or even introduced as the main item in architectural design (as in the rock temples of Nubia), but other elements such as obelisks, series of pylons alternating with porticoed courts, and processional alleys bordered with sphinxes were used extensively. All of these were for the benefit of the god and the pharaoh's popularity. The architectural program of the temples swelled with continuous additions through succeeding reigns, and the quarries had to be worked at an unprecedented rate. Wood from the Lebanese cedars for columns, ceilings, huge doors, flagstaffs, barges, and temple furniture was so indispensable that a special expedition had to be dispatched in the reign of Ramses XII. An image of Amun, called "Amun-of-the-Way" was to protect the messenger Unamun who sailed for Byblos. The predicament in which Unamun became entangled as a result of the hypocritical treatment at the court of the Lebanese prince throws an unfavorable light on the foreign prestige of the latest Ramessid. Copper and gold had also to be provided to overlay doors, low reliefs, pavements, and furniture.

A large part of the booty in riches and manpower from wars was awarded to the gods, and settlements of prisoners were established around the temples to work on architectural and maintenance projects.

The priesthood of other local gods enjoyed flourishing periods, and temples were built in Thebes, Abydos, Memphis, Heliopolis, and the Delta, to which site Ramses II transferred his capital Tanis. With the extension of the empire, temples were built in the imperial outposts along the valley in Nubia (Buhen, Beit el Wali, Abu Simbel, Derr) and the Sudan (Sesebi, Soleb), as well as in desert areas at the quarry settlements (Redesiya, Sinai, Silsila) and even in Asia (Tjalu).

SOCIAL

With the continuous warfare of the southern nomes against the Hyksos the Egyptians grew to be far more military-minded than they had ever been before. Besides this new trend, they acquired during the century of Hyksos rule many features of the invaders' civilization.² Probably the most important of these was the use of the horse with chariots and occasionally for riding. Intimately connected with it was the use of the wheel in light two-wheeled chariots for warfare and for the pharaoh's use, and later for private use. As a consequence architecture had to adapt itself to the nature of this new means of transportation and provide ramps as in Mesopotamian palaces instead of stairways in the royal palaces ('Amarna). The Hyksos weapons were soon imitated by the Egyptians themselves, and there is no doubt that they found the compound bow, built of several layers of wood, sinews, or horn glued and bound, much more efficient than the native longbow. In the early Eighteenth Dynasty there is evidence of the use of metal arrowheads and metal armor, probably also imported by the Hyksos. A modified northern type of dagger, similar to those in Crete and the Greek islands, is inscribed with the names of Hyksos kings and later with those of Egyptian pharaohs. Other new weapons were also introduced, such as the long saber to be wielded with both hands and a curved sword from Mesopotamia. Innovations in the weapons and metals can also be ascribed to the Hyksos influence. Bronze and perhaps iron came to be used in helmets, scale armor, and arms.

Of the constructive elements for peaceful pursuits possibly acquired by the Egyptians from the Hyksos, the watering device (Arabic, *shaduf*) seems to be the most important.³ The earliest representation occurs in the Nineteenth Dynasty tomb of Ipuky, but it could have been known earlier. In the manufacture of textiles, instead of the one-spindle horizontal loom, two or more spindles suspended from the ceiling increased the output. We find paired bellows for a blacksmith being worked by a man standing with one foot on each of them. Perhaps one could also count among Hyksos importations the method of branding cattle, a new type of razor, and the long-necked lute. It must be stressed, however, that these are nothing but surmises and it would be dangerous to ascribe to a warlike people such cultural factors that would be more readily achieved by Egypt, simply because no proof of their previous existence has been found.

The impact of the Hyksos invasion and rule upon art seems to have been of less importance, for they were not builders. The fortifications they built around their cities, as at Tell el Yehudiya and Heliopolis, were earthworks similar to those they built in Palestine, surrounded by a deep moat on a strictly rectangular plan with rounded corners. Such a layout is clearly the outcome of planning on a wide stretch of level ground, such as the steppes of Asia afforded.

Egypt emerged from the conflict with the Hyksos as a military power seeking to spread its political influence outside the limits of the country east and south to prevent another invasion. The pharaoh was the commander of the army, and the high officials were appointed by him and followed him in his campaigns. The army, which was well organized and equipped with the new weapons, succeeded in creating one of the largest empires in the ancient world. The new science of military strategy was an important factor in Egyptian warfare, and the experience the early nationalists at Thebes had acquired during their fights against the Hyksos was perhaps not the least important foundation of that science.

The pharaoh was not only the commander of the army but also the only head of the state, which he governed with the help of two ministers (Arabic, *vizier*).⁴ An exceedingly interesting text from the tomb of the vizier Rehmire⁴ in the reign of Thutmose III describes the elaborate duties of the vizier and stresses that the ideology to be followed should tend toward public welfare and justice. A new, important post, created to take care of the country south of Egypt, was that of the "Viceroy of Nubia" or "King's son of Kush." Local chieftains of Asia were appointed to rule with the help of Egyptian officials. Loyalty to an idealistic and rather weak sovereign like Akhenaten was insured through generous distributions of titles and golden assets, as represented in the contemporaneous low reliefs in the tombs.⁵

The high priest of Amun at Thebes was perhaps the richest and most powerful individual after the pharaoh, and the endowments constantly awarded to this priesthood by the pharaohs contributed to a gradual transfer of power from the Court to Amun. It has been said that Egypt under the last Ramessids was governed by two parallel dynasties, that of the pharaoh and that of the high priest, with the latter ever increasing in power while the former decreased.⁶

The feudal system had disappeared by this time, and the state was

manned by officials whose rank and progress depended upon their ability and the favor they enjoyed at the court. Officials no longer were buried in the vicinity of their sovereign's tomb after death, as the royal tombs were excavated secretly inside the western cliffs of Thebes, and blocked and hidden after the funeral.

Pharaoh was still of divine descent, as he had always been; but whereas he had assumed the title of "Son of Re" in the Old Kingdom, he enjoyed no parallel title, "Son of Amun," in the newer official titulary. In two instances when the pharaoh wanted to justify his rights to the throne, he had recourse to a propagandistic device, describing his birth as the result of theogamy. Amun-Re⁷ himself is said to have begotten Hatshepsut or Amenhotep III through the queen mother, and the various phases are described and represented on the walls of their respective temples at Deir el Bahari and Luxor. Akhenaten was the Son of Aten "who came forth from his rays."⁷ All through the official records there is constant concern by the pharaohs about the validity of their rights to the throne. Many of them were really usurpers and various means to validate their status, besides that of theogamy, all involving some divine intercession, are staged. Pharaohs also had recourse to a direct approach to public opinion through their social welfare programs. Civic sense had developed ever since the end of the Old Kingdom, and we see the pharaohs of the Empire building new towns for workmen (Amarna East, Deir el Medina) and establishing wells and settlements in the mining districts. Urbanism had become a royal pursuit. "How evil is the way without water," exclaims Seti I.⁸ "I planted the whole land with trees and verdure, and I made the people dwell in their shade," boasts Ramses III.⁹

There is no doubt that Egypt reached the apex of its power during the Empire and that richness was the current feature of this prosperity. Art flourished and showed many influences from abroad, together with more versatility and facility than genuine high refinement. The greater social freedom that the people were allowed to enjoy during the reform by Akhenaten, when even the colloquial language was intermixed with the official classical language, is exemplified in an outspoken naturalism. Architecture followed the general trend and most of its monuments had to be colossal, although often with a corresponding debasement in the proportions and taste. Huge scale and optical illusions in architecture were to impress the peoples of the Empire, especially in the newly subdued countries, with the everlasting might

of the pharaoh.¹⁰ New towns were founded in the remotest districts of the Sudan (Sesebi) as military outposts rather than for the immediate benefit of the natives. Not content with the monuments they actually built, some of the pharaohs and particularly Ramses II transferred earlier monuments to their own names by erasing the names of their makers.

HISTORICAL

Much of the valorous spirit of Seqenenre', who lost his life in a battle against the Hyksos, and of his sons Kamose and Ahmose, the founder of the Eighteenth Dynasty (1580-1314[?] B.C.), seems to have persisted in the dynasty's famous pharaohs. They carried their victorious arms deep into Nubia and Asia. Queen Hatshepsut sent an expedition to trade in Punt (Somaliland[?]) and it brought back precious metals, rare animals, and trees for the temple of Amun-Re', her father. She had to use many a political stratagem with the able help of her Steward and Architect Senmut and Hapuseneb, the high priest of Amun and all the gods of Egypt, to maintain herself on the throne in spite of the intrigues of her nephew Thutmose III. This nephew was sole ruler at her death, and he hastened to have all her statues destroyed and her inscriptions erased. He proved to be a successful general, extending the frontiers to the Euphrates and the Fourth Cataract on the Upper Nile. This martial tradition was carried on by Amenhotep II and Thutmose IV. But Amenhotep III was not an outstanding warrior, and he maintained peace by marrying a Mesopotamian princess, probably favoring her creed and culture. No less than 317 Mesopotamian ladies accompanied the princess as retainers.¹¹ The religious reform of his son Amenhotep IV, who changed his name to Akhenaten and founded the new capital of Akhetaten in the desert of Middle Egypt at 'Amarna, was probably as much a result of his education in an Egyptian-Mesopotamian milieu as of his own initiative and his hatred of the clergy of Amun-Re'. He was too busy with his idealistic and religious pursuits to take care of his foreign possessions; and they were lost to his weak successors, who had to acknowledge Amun-Re' at Thebes.

This was the poor condition in which General Horemheb found Egypt when he usurped the throne and founded the Nineteenth Dynasty (1314[?]-1200 B.C.). His general Pa-Ramses succeeded him under the name of

Ramses I, the first in a line of pharaohs who had to fight a warlike people, the Hittites from Asia Minor, and the ever turbulent Libyans. Seti I and Ramses II are the most famous of these conquerors. The latter insured peace by victory in battle and his marriage with Hittite princesses. Under Merneptah a general invasion by Libyans and their allies, the Peoples of the Sea—Achaeans, Sicilians, Etruscans, and Sardinians, as well as Philistines—had to be crushed. A few feeble pharaohs allowed their enemies to enter the Empire. Anarchy was checked by Setnakht, who founded the Twentieth Dynasty (1200-1085 B.C.). His successor Ramses III was the most successful pharaoh of this new family, and his wars stopped the activity of the Libyans and their allies as well as that of the Asiatics. The large enclosure and gateways of his mortuary temple at Medinet Habu embody many architectural features of Syrian origin and a clever use of optical illusions to enhance the impression of huge scale.

His successors Ramses IV-XI (1166-1085 B.C.) could not keep their possessions in Asia, although Nubia remained loyal. Even a trade expedition, such as the one headed by Unamun and accompanied by "Amun-of-the-Way" in the reign of Ramses XI, had to cope with the contemptuous attitude of the princelet of Byblos. The administration seems to have been deteriorating, as is shown by the corruption revealed at the inquest held at that time into the robbery of the royal tombs. Corruption and insecurity, together with the ever increasing power of the priests of Amun-Re', were the decisive factors that led the priests to mount the throne as pharaohs in the Twenty-First Dynasty.

Egypt's greatness had waned as a result of constant struggles in military activities, and never again could it regain the controlling power in political fields or become the leading nation in cultural spheres. The period following, sometimes regarded as an integral part of the New Kingdom, was actually a decadent period (1085-715 B.C.).

Two internal factors can also be held responsible for the decline of the royal authority in the Ramesside Dynasty. Latent intrigue seems to have characterized the court of Pharaoh since the earliest times of the Middle Kingdom. In the reign of Ramses III a conspiracy against him was led by one of the queens, and like that against Amenemhat I¹² it was not discovered in time. The members of the plot were tried by a special court of fourteen officials, among whom were four foreigners (a Libyan, a Lycian, a Syrian, and one, Kedendenna, of uncertain nationality).¹³ Pharaoh had to rely on the

cooperation of foreigners in such an important body as that of the Court of Justice, as well as their use as mercenaries in his army and bodyguard (Ramses II, Ramses III).¹⁴ But even this court proved to be corrupt, as two judges and two officers were convicted of conniving with the conspirators.

Reliance upon foreign mercenaries and internal corruption were the undeniable signs of decay in an obsolete monarchy.

EGYPT AND THE OUTER WORLD

The pursuit of the Hyksos into Asia by the earlier pharaohs of the Eighteenth Dynasty led their successors to conquer and establish an empire. Thutmose III was the first and probably the most successful of these conquerors. Politics played its role in the marriage of four successive pharaohs with princesses from Mitanni, a state governed by Indo-European newcomers who had established themselves in northern Syria. The influence of these marriages upon the environment at the court of Egypt was perhaps at the basis of the reaction of Akhenaten against tradition in culture, extending from religion to language and art. Mitannian civilization, meanwhile, showed distinct foreign influences: Mesopotamian, Hittite, Aegean, and Egyptian. Of these influences, one could presumably mention the use of a central courtyard with a southern portico in the palaces (Niqmepa at Tell Atchana).¹⁵ Such a feature is similar to the earlier one at Lahun, though reversed. Egyptian influences are to be traced in sculpture (stela of Ras Shamra)¹⁶ and in scenes carved in gold¹⁷ and ivory.¹⁸

The military power of Egypt was so much neglected under Akhenaten that the Mitannian ally Dushrata failed to receive any help from Egypt in the war against the Hittites. Mitanni was destroyed. The Egyptian possessions in Asia disintegrated and Syria fell to the Hittites (1360 B.C.). It was not until the reigns of Seti I (1312-1298 B.C.) and his son Ramses II (1301-1235 B.C.) that Egypt reconquered part of the former empire, including Lebanon. The Aegean and Egypt strongly influenced the culture and the art of Palestine and southern Syria.¹⁹ This is most conspicuous in the use of ivory inlays and sarcophagi with scenes featuring themes and a treatment of Egyptian inspiration. In the Ramesside times the themes followed Egyptian models strictly, although the style remained un-Egyptian.

II

Domestic Architecture

EVIDENCE FROM TEXTS

Only scanty information can be gathered from texts and this is almost exclusively about royal palaces or houses in temple grounds. We are allowed to catch a glimpse of the splendors of the royal court when a queen leaves her palace in a carrying chair (Queen Nitokris, Twenty-Sixth Dynasty), or when the pharaoh and his family come to the window of appearance to distribute the gold of reward to his faithful followers (Akhenaten, Eighteenth Dynasty), or on the occasion of "sitting in the audience-hall, the king's appearance with the etef-crown, upon the great throne of electrum, in the midst of the splendors of his palace" (Queen Hatshepsut, Eighteenth Dynasty).²⁰ The palace serves even as a term of comparison in the description of the richly adorned shrine set on the sacred barge: "A great shrine was in the midst of it, of fine gold, with inlay of every costly stone like a palace" (Ramses III).²¹ This same pharaoh Ramses III describes his palace in the temple dedicated to Amun at Medinet Habu: "I made for thee an august royal palace within it (the temple), like the palace of Atum which is in heaven, the columns, the door jambs and the doors of electrum and the great window of appearance of fine gold."²²

A technical description of a palace during the various periods of Egyptian history has not yet been found.²³ We can find a meager substitute, however, in the florid descriptions of the residences that were used as literary models in the scriptorium during the New Kingdom. The castle "Great-of-Victories" is the palace of Ramses II (1301-1235 B.C.) at Pi-Ra'messe, the Delta Residence, and it is the subject of an enthusiastic epistolary piece of literature: "His Majesty (Life-Prosperity-Health) has built himself a castle whose name is Great-of-Victories. It lies between Djahy and To-meri, and is full of food and victuals. It is after the fashion of On of Upper Egypt, and its

duration is like that of He-Ka-Ptah. The sun arises in its horizon and sets within it. Everyone has forsaken his (own) town and settled in its neighborhood. Its western part is the House of Amun, its southern part the house of Seth. Astarte is in its Levant, and Edjo in its northern part. The castle which is within it is like the horizon of heaven."²⁴ According to this laudatory text the Delta residence at Tanis would stretch from Lebanon (Djahy) to Egypt (To-meri), look like Hermonthis (On) and be as enduring as Memphis. The mention that everyone has left his town to settle in the vicinity is interesting as denoting the usual reaction of the courtiers and the grandees toward a new foundation of Pharaoh, whether it be a palace or a tomb. A further description of Tanis is left by another scribe under Merneptah (1234-1224 B.C.): "Pi-Ra'messe-Miamun (Life-Prosperity-Health), the forefront of every foreign land and the end of Egypt, the (city) beauteous of balconies radiant with halls of lapis lazuli and turquoise. The marshalling place of thy chariotry. The mustering place of thy army, the mooring place of thy ship's troops."²⁵ Glazed faïence tiles of the color of lapis lazuli and turquoise are actually used in the ornamentation of the palaces. The residence is evidently the center of the armed forces in Egypt. Elsewhere this same Delta residence is said to have "the layout of Thebes,"²⁶ as a characterization of its beauty.

The capital city of Thebes has become to be considered as "The City" (Egyptian *Nwt*) par excellence, a denomination to be compared to the Roman *Urbs*.²⁷ Scarcely any information can be derived from the numerous poems in praise of Thebes and its god Amun which probably resulted from the reaction of the powerful priesthood after the disappearance of Akhenaten and his religion at 'Amarna.²⁸

The impression one obtains of the capital of Akhenaten at 'Amarna from its description in the tomb of Mai is no more objective, though it leaves an idea of a sun-bathed, rich, and joyful city: ". . . the mighty Akhetaton, great in loveliness, mistress of pleasant ceremonies, rich in possessions, the offerings of Re in her midst; at the sight of her beauty there is rejoicing. She is lovely and beautiful; when one sees her, it is like a glimpse at heaven; her number cannot be calculated. When the Aton rises in her, he fills her with his rays."²⁹

Names of palaces, however, are known and are always compounds praising some quality, such as "Structure-of-Beauty" (Palace of Pharaoh Neferhotep, Thirteenth Dynasty),³⁰ and often related to a deity (Akhenaten's palace).

Some impression of the extensive area occupied by such buildings can be gained from a text depicting how the booty that was gathered after a battle against the Libyans was carried into the palace of Merneptah, probably at Memphis: ". . . his possessions, his equipment, his silver, his gold, his vessels of bronze, the furniture of his wife, his throne, his bows, his arrows, all his works, which he had brought from his land, consisting of oxen, goats, and asses, and all were carried away to the palace, to bring them in, together with the captives."³¹

Some mention of the construction of houses, probably for priests and on a standard regular plan, in the precinct of temples is made briefly by Ramses III, speaking about his pious activity in relation to the gods: "I made houses and temples in their courts."³² The title of a list of the gods' income reads: "Things exacted, impost of the people and all the serf-laborers of the houses, temples, and estates."³³ Among the various items given by Ramses III to the gods is a "House, equipped with timbers,"³⁴ possibly some kind of garden kiosk.

An interesting record related to the history of domestic buildings gives information about the refectory of the priests of Amun at Karnak and the dwelling nearby. The high priest's dwelling had been built by Senusert I and must have been a fairly large structure. The high priest Roy had restored the refectory in the reign of Merneptah and inscribed a record on Pylon VIII at Karnak: "I found this house in complete ruin; its walls falling, the woodwork wretched, the doorposts of wood perishing, the paint (faded). I (laid it out) with increase throughout, heightened and widened and (established). I made its doorposts of sandstone, I mounted upon them doors of real cedar; a (place) for the bakers and mixers who are in it. I made it a better work than before, for the protection (of the servants) of Amon, lord of gods."³⁵ To this record was appended a prayer asking all bakers and mixers who daily entered to remember him in a prayer to Amun. The structure near it, perhaps a fowl house,³⁶ was found in a ruinous state and rebuilt by the high priest Amenhotep, in the reign of Ramses IX, nearly a century later:

Then I built it anew with fine work and excellent workmanship. I made thick its walls from its rear to its front. I built thoroughly upon it, I made its columns and doorposts of great stones of excellent workmanship. I set up great doors of cedar, bound. I built thoroughly upon its great lintel of stone which looks (outward), built . . . (high) . . . the High Priest of Amon, who is in the house of

Amon. I (mounted) its great door of . . . , with bolts of copper and inlay-figures of fine gold and (silver). . . . I built its great (courses) of stone, which opens toward the southern lake, upon the pure . . . of the house of Amon. I surrounded (it with a wall) of brick. I erected its great (carvings) of stone (at the doorposts). . . . I built a treasury of brick anew in the great hall.

In a further reference to Amenhotep's restoration work at this site, he tells of: ". . . bringing artificers in every great work, that I might build the great place south of the (lake). . . . I built this (double house) of the House of Amon anew; I made its double doors, wrought of meru wood, the inlay-figures of fine gold." Breasted identified the "great place" as the refectory.³⁷ If these descriptions are accurate, the buildings must have been quite rich, with inlay figures of gold on cedar doors and stone carvings that could have decorated royal palaces, rather than magazines (*shena'*), or even a refectory.

No mention of private houses can be found except that of the architect Ineny who outlived three kings and was favored by Queen Hatshepsut: ". . . she presented me with things, she magnified me, she filled my house with silver and gold, with all beautiful stuffs of the royal house."³⁸ Less trustworthy but still interesting are the fabulous descriptions of the villa that the pupil promises to build for his master:

I will build for you a new villa upon the ground of your city, planted (with) trees on every side of it. Its stalls are within (it), and its granaries are full of barley and emmer; there is wheat therein, and *b'*, falcon-face beans, *gnn*, lubyah-beans, lentils, corianders, peas, seed-corn of emmer (?), *'dn*, flax, green stuff, reeds (?), rushes (?), *istpn*, dung for the winter, alfa-grass, reeds and cypress-grass (?) produced by the basketful. Your stall of bulls doubles the droves and your breeding-cows are pregnant. I will tend for you five groups of cucumber-beds to the south of your village; and the cucumbers, carobs and *izds*-plants will be abundant even as sand. Let ships come to load them up. May you take cognizance of what you will present to Ptah, kindly of face, that he may fulfill for you your desire.³⁹

This "literary estate" is surely to be located in the country and seems to be well provided with all kinds of produce that would appeal to a farmer, even to include dung and alfa grass as winter fuel. No fruit or artificial pond full of lotus flowers is mentioned.

The country house of Ra'ia near Tjabu (Qaw el Kebir) must have been located on the east bank of the Nile, near the waterfront, and was supposed to contain all kinds of essentials and amenities, even a pool for breeding birds, stalls and grazing grounds for oxen and other cattle, and cool green places:

Ra'ia has built a goodly villa which is opposite Edjo. He built it on the verge (of the river), . . . as a work of eternity and planted with trees on every side of it. A channel is dug in front of it, and sleep is broken (only) by the splash of the wave. One does not become tired at the sight of it: one is gay at its portal and drunk in its halls. Fine door-posts of limestone, inscribed and carved with a chisel; fine portals hewn anew, and walls inlaid with lapis lazuli. Its granaries are supplied with plenty and packed (?) with abundance. A fowl-yard and an aviary with ro-geese; byres full of oxen; a breeding-pool with geese; horses in the stable. . . . You sit in their shades and eat their fruit. Wreaths are made for you of their twigs, and you are drunken with their wines.⁴⁰

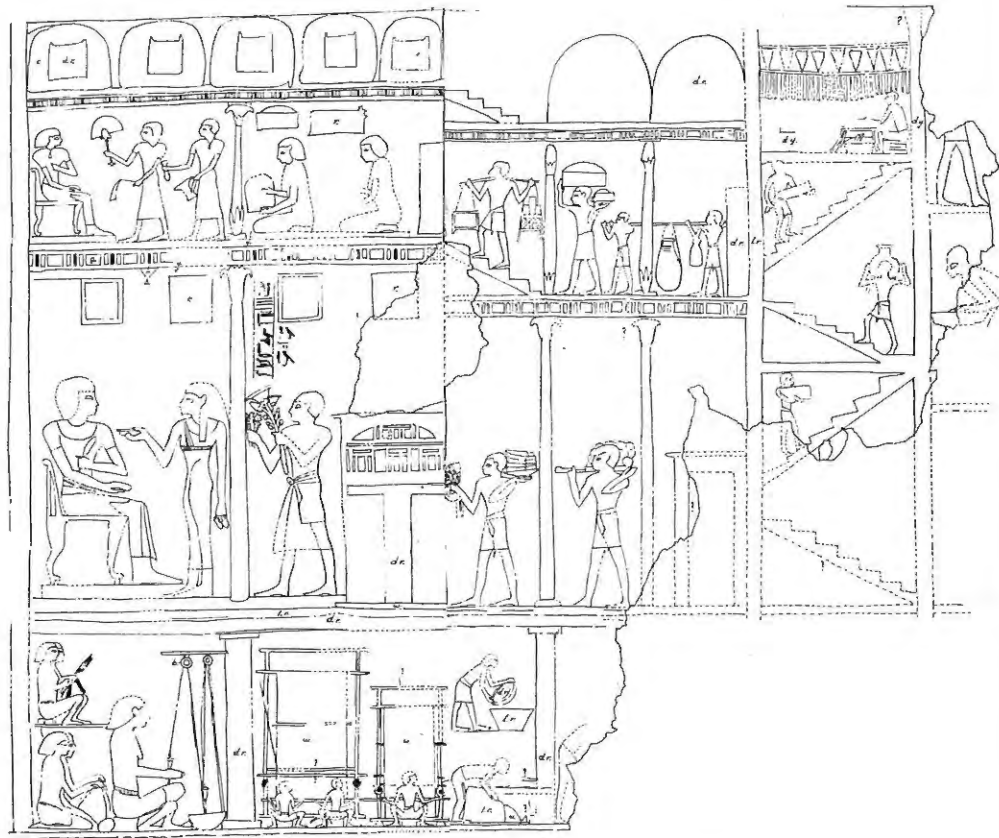
REPRESENTATIONAL EVIDENCE⁴¹

The scenes on the walls of the private tombs during the New Kingdom frequently give information about the appearance of the master's house, either his town house or his country house. These data prove invaluable for the reconstruction of the typical house of that period. The main sources of documentation are Thebes and 'Amarna, two capitals quite different in their ideological and physical characters. In contrast to Thebes, "The City," already crowded with many-storied houses and mansions along the riverbank, there is the new boom town of 'Amarna, erected in the desert where ground could not have been valuable. These opposite characters are clearly reflected in the town houses at Thebes and the villas and palaces at 'Amarna.

THE TOWN HOUSE

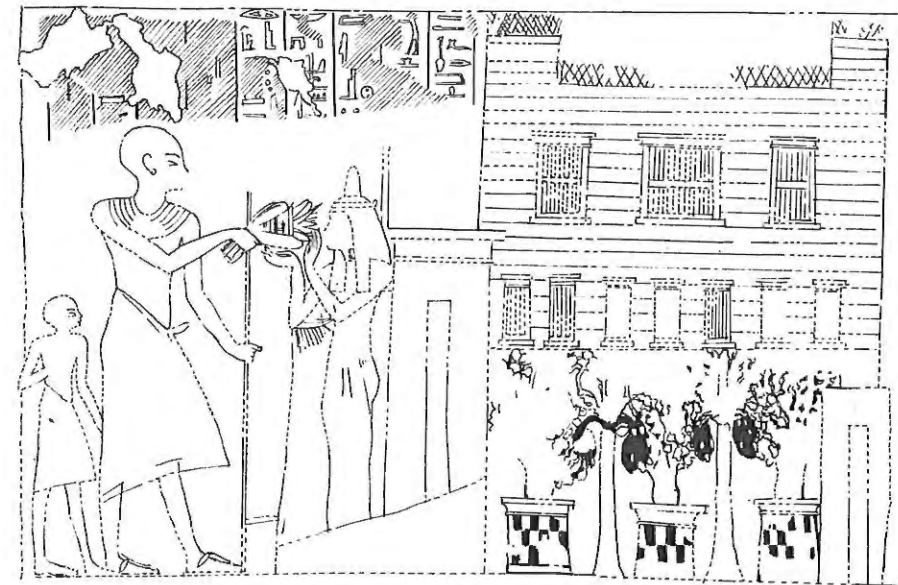
Four Theban drawings, three of which date from the period preceding the 'Amarna times, give an interesting picture of the town house.

HOUSE OF THUTNEFER (TOMB 104). This is the only known sectional drawing of a house (fig. 1). The royal scribe Thutnefer, who lived in the reigns of



1. Section in the town house of Thutnefer at Thebes.

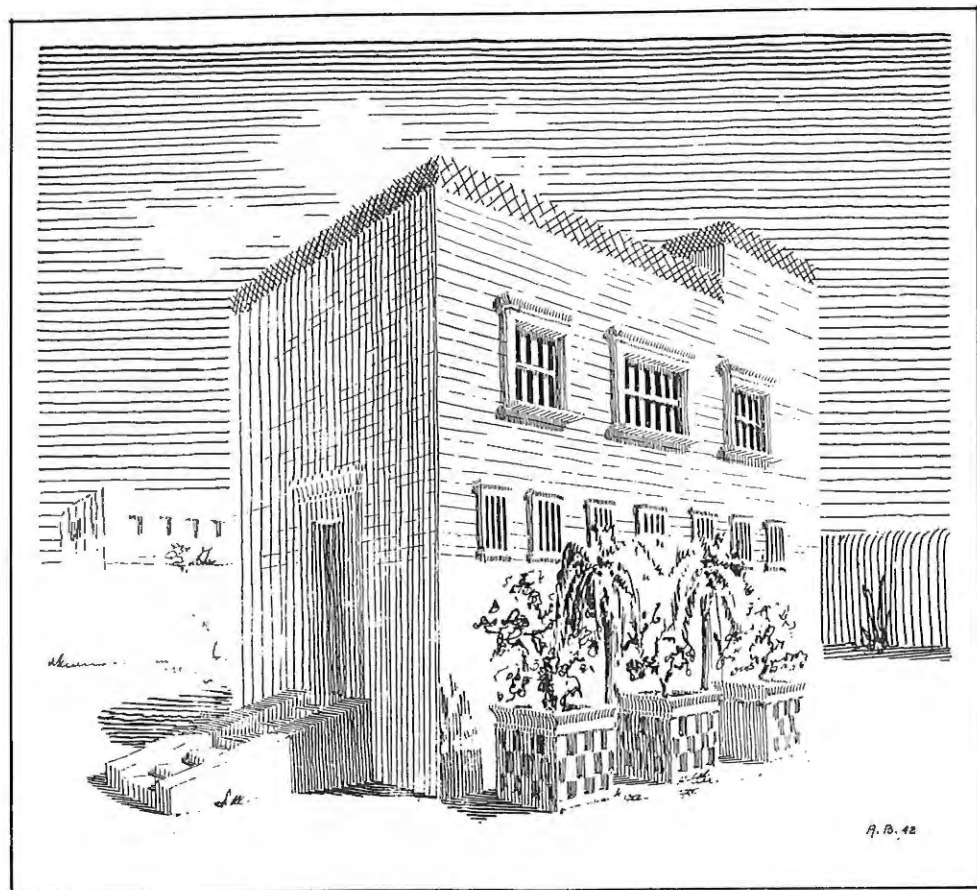
Thutmose III and Amenhotep II, had a large three-storied house at Thebes. The drawing is clearly divided into four vertical parts, the one farthest to the right being almost completely destroyed. The next one represents the staircase servicing all the stories and the terrace. The third part shows an antechamber with two columns in both the ground floor and the first floor. In the last section to the left are featured the reception hall on the ground floor and a living room on the first floor. The whole basement, apparently without windows, is occupied by a weaving shop and a bakery. The ground floor is almost twice as high as the basement and has the most stately hall of the house, with a palmiform column in its center, a two-leaved door shown rabatted at one end, the master's armchair on a dais at the other end, and two or four windows at the top of the wall. The hall on the first floor has a low ceiling on one papyriform column and a simple door to which a short flight of steps ascends



2. Representation of a two-storied house from tomb 254 at Thebes.

from the antechamber. On the terrace, silos are set in a row along the parapet wall, while pieces of meat are drying on a line. Silos were already commonly placed on the terrace in the Middle Kingdom, as is proved by the models, the so-called soul houses, of that time.

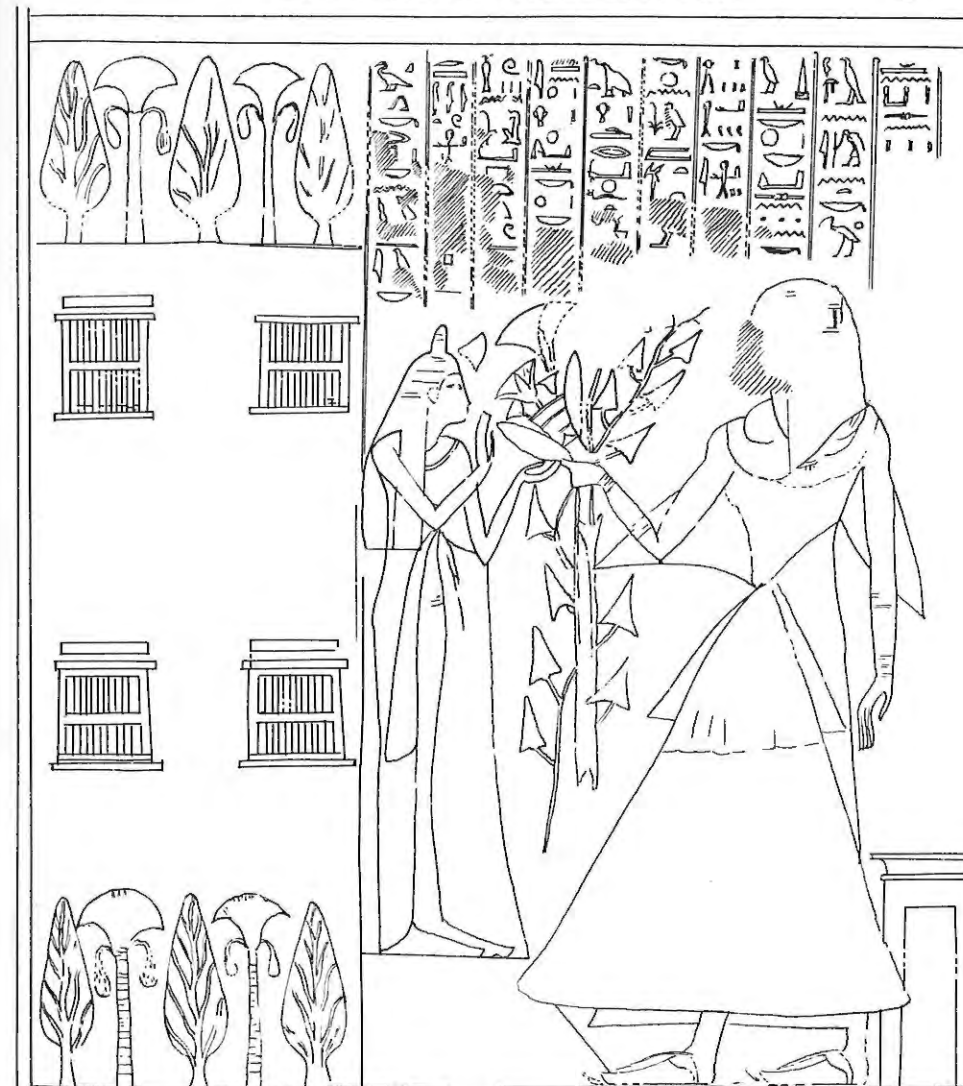
HOUSE REPRESENTED IN TOMB 254. The painting gives a side view of a two-storied house with two entrance doors rabatted (figs. 2, 3). The large front door opens at the top of a few steps, while the back one is at ground level. Two palm trees alternate with three bushes that are planted in large brick containers. (Palm trees can be planted near the foundations of structures since their roots bore vertically into the ground.) Each story is lit through a row of windows, those on the ground floor being small and set high up in the wall, while those on the first floor are large and open at mid-height. The windows are closed by a vertical grating and have a sill and a cornice molding. On the terrace a small chamber rises at each corner and a cresting of rushes, set diagonally in the top of the wall, forms a balustrade similar to those still in use today in houses at El Kharga Oasis and in villages. Horizontal stripes starting with the level of the ground floor window sills cover the façade, probably imitating the courses of a stone wall, vaguely reminiscent of the similar stripes in Minoan houses.



3. Restored perspective of house from tomb 254.

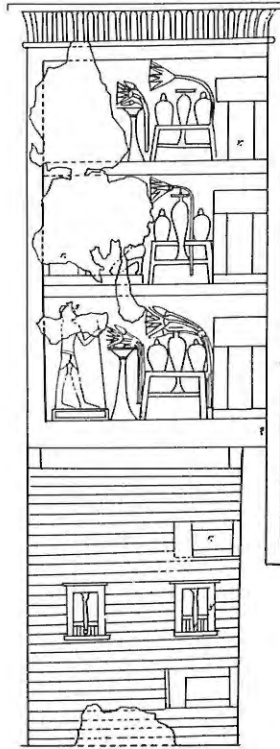
HOUSE OF TJOY (TOMB 23). This drawing represents a lateral façade of two stories, with two low grated windows in each, an entrance stairway, and a row of five trees on each side of the structure. A doorway indicates an enclosure wall (fig. 4).

HOUSE OF SENNUFER (TOMB 96). The house is adjacent to a chapel with three shrines, in the great garden of Amun. The drawing is a queer compound of an elevation set beneath a plan, two walls of which still appear briefly at the top (fig. 5). The two doors are rabatted and the house could have had one or two stories, with two double windows on the top floor.



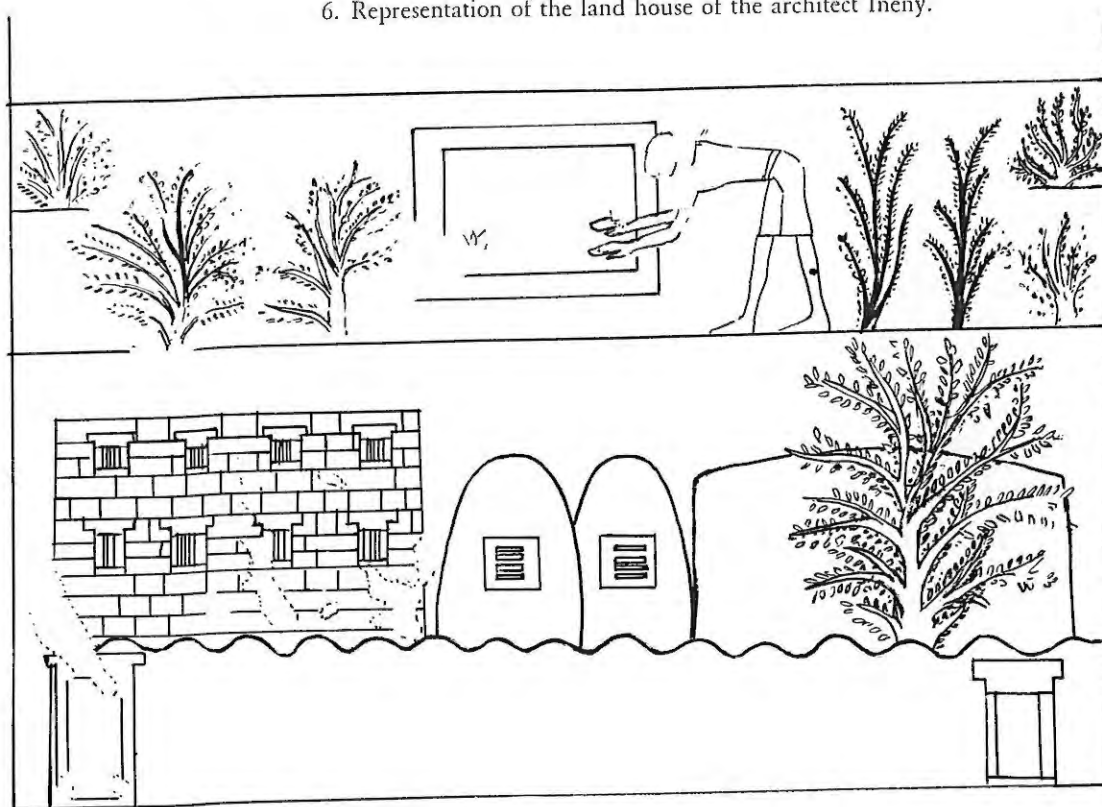
4. Representation of a house from the tomb of Tjoy.

THE TYPICAL TOWN HOUSE AT THEBES IN THE NEW KINGDOM. It seems to have been the rule to build many-storied houses on the valuable ground at Thebes. A model of the same period as the paintings represents a town house having an entrance doorway opening into a basement, indicated by low horizontal windows at ground level, a first floor with large double mullion windows, grated in their lower part, and a terrace, half of which is occupied by a



5. Compound representation of a plan and an elevation of a house from the tomb of Sennufer.

6. Representation of the land house of the architect Ineny.



portico with windows and a column, such as was usual in houses during the Middle Kingdom (according to the so-called soul houses). A basement, a ground floor for the reception quarters, and an upper one for the private apartments, topped by a terrace, could be considered as forming a typical program.

The basement of a town house must have contained workshops and magazines and would have received light through horizontal windows. The main entrance opens in the narrow façade, usually at the top of a few steps. A smaller service door may open in the opposite façade. The refreshing green of a garden is represented by some trees growing along the walls, sometimes in large brick boxes. The main part of the façade is decorated with horizontal lines in red on a white or lilac background, and each story is lit by a row of windows on all façades. On the terrace a portico is occasionally erected at the back, and silos set in a row along the wall which is itself ornamented with a parapet of rushes or palm fronds. A staircase rises from the ground level to the terrace.

THE COUNTRY HOUSE

Paintings represent country houses of various sizes and degrees of elaborateness, differentiated into land houses, where the master lived, and rest houses, which were used on occasional visits to the estate.

Examples of Land Houses

INENY. The well-known architect could afford to build such a large land house in a beautiful estate as is shown in the paintings in his tomb. A long wall topped with scalloped cresting, probably in mud, encloses the whole garden and two doorways open at both ends of the façade, the larger one fronting the house. The façade of the house is entirely divided into courses of large blocks as if built of dressed ashlar stone. Two rows of a simple type of window indicate at least two stories, but no room is left for the parapet of the terrace. Two huge domed silos and a magazine roofed over with a flat vault rise nearby. The garden, with rows of shrubs and trees and an artificial pond, extends far behind the house (fig. 6).

Dependencies are erected separately and were very likely enclosed within a separate court, as in the villas at 'Amarna.

HOUSE OF HATIAI (TOMB 324). The overseer of the prophets, Hatiai, had his house near a chapel with three shrines in a formal garden. The painting shows for once a true plan, rectangular with two doors on the long frontage (fig. 7). The larger door opens onto a court or reception hall, communicating with a living room backed with a bedroom. The other smaller door seems to open onto a service court.

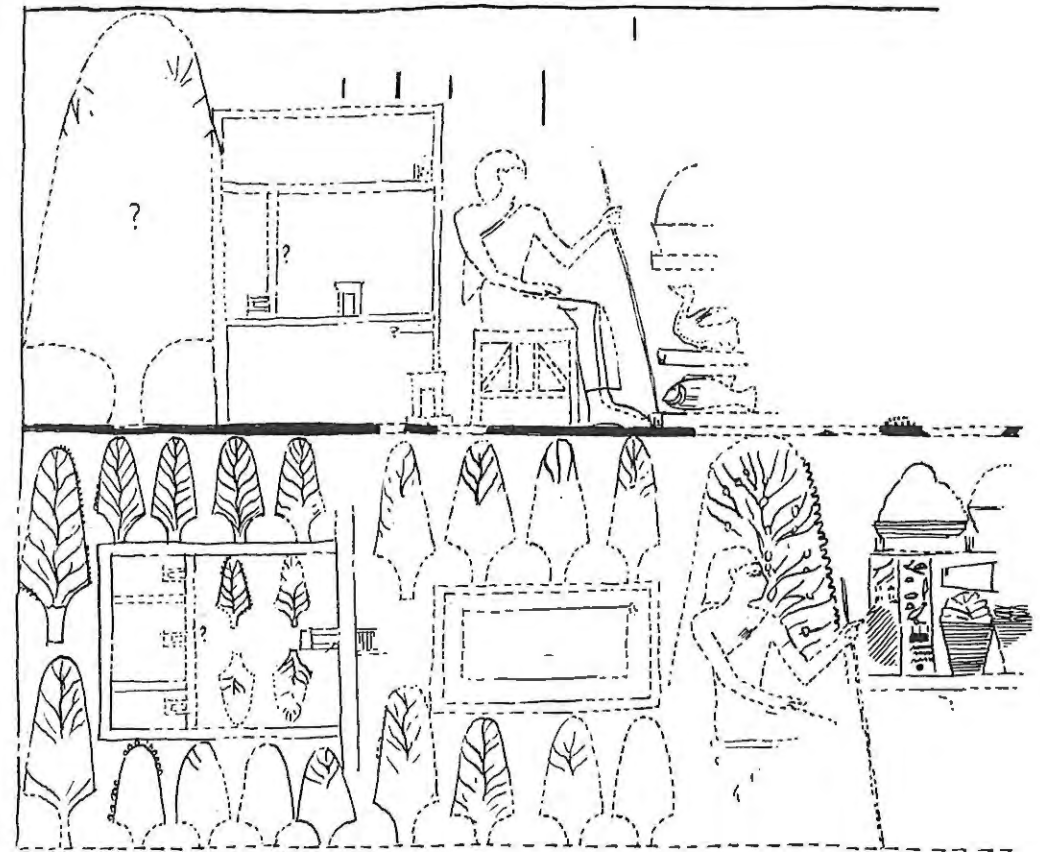
Examples of Rest Houses

NEBAMUN (TOMB 90). This had an almost square façade with a door at one end, topped with a double window, grated in its lower part. Two windows at a higher level, richly decorated with vertical rows of circles, light the interior. This seems to indicate that there could have been two stories (fig. 8). Above the ceiling two mulqafs (ventilators) are set back to back, possibly actually side by side, as shown in the models of the Middle Kingdom houses and in other paintings. The artist seems to have pleased himself with an elegant composition of two windows, two mulqafs, and two gracefully bending doum palms set about a vertical axis of symmetry.

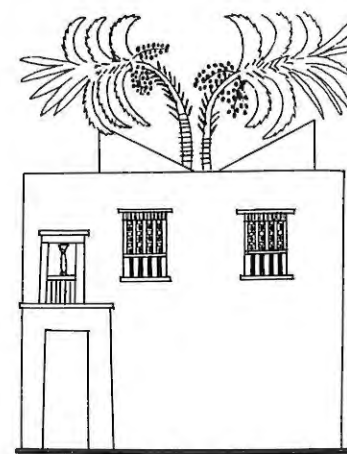
NAKHT (PAPYRUS OF NAKHT). The small house is erected upon a platform with a stairway ascending to an entrance door, shown rabatted. A row of simple windows opens just below the terrace, and two mulqafs, directed toward the front façade, probably north, ensure adequate ventilation (figs. 9, 10).

HOUSE OF NAKHT. This other small house, similar to those of Nebamun and Nakht, stands in the middle of the fields, a setting that provides a natural frame for this type of rest house.

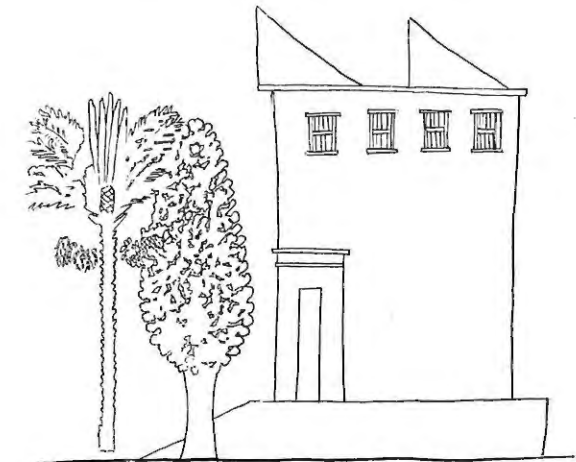
THE TYPICAL COUNTRY HOUSE IN THE NEW KINGDOM. From this rapid perusal of representations it is possible to give the description of a typical contemporaneous country house. It stands behind an enclosure wall, is two or three stories high, and is built of dressed stone or rather of brick painted to imitate it. The dependencies consist of the silos and magazines and are set nearby in a separate



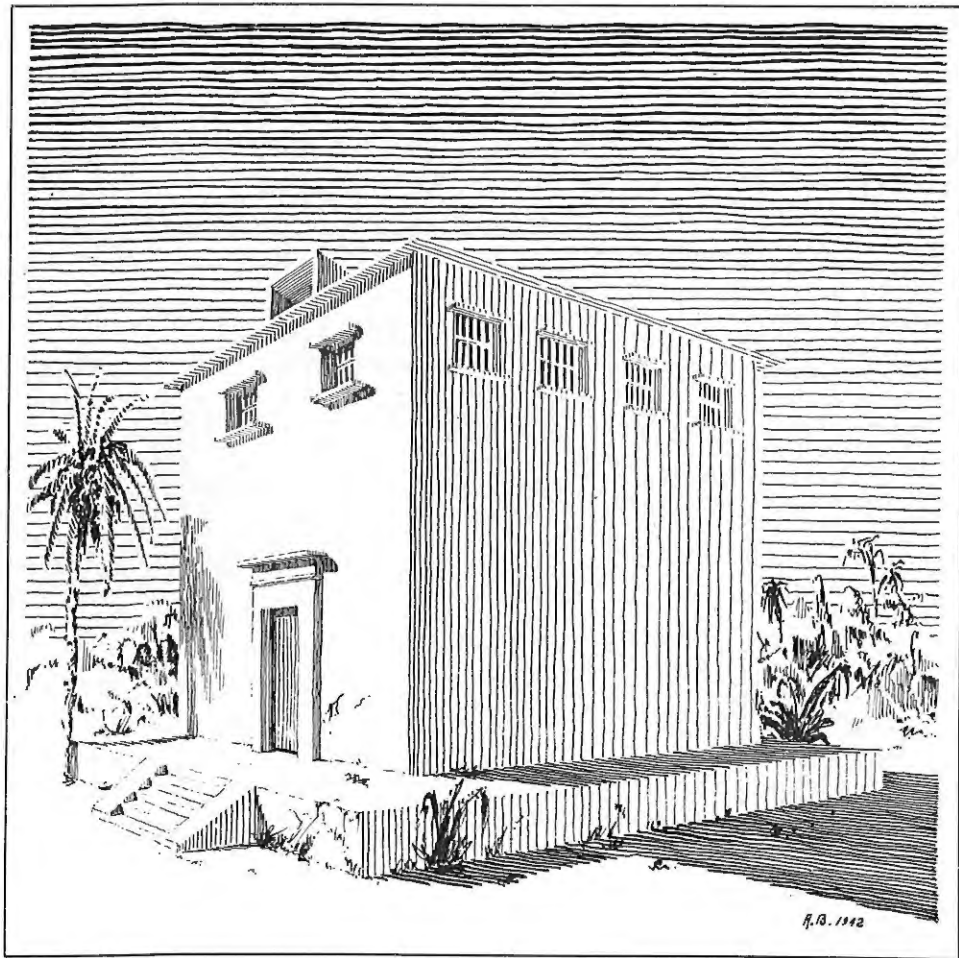
7. Representation of the estate of Hatiai, the Overseer of the prophets.



8. Representation of the house of Nebamun.



9. The house of Nakht from a drawing in his papyrus.



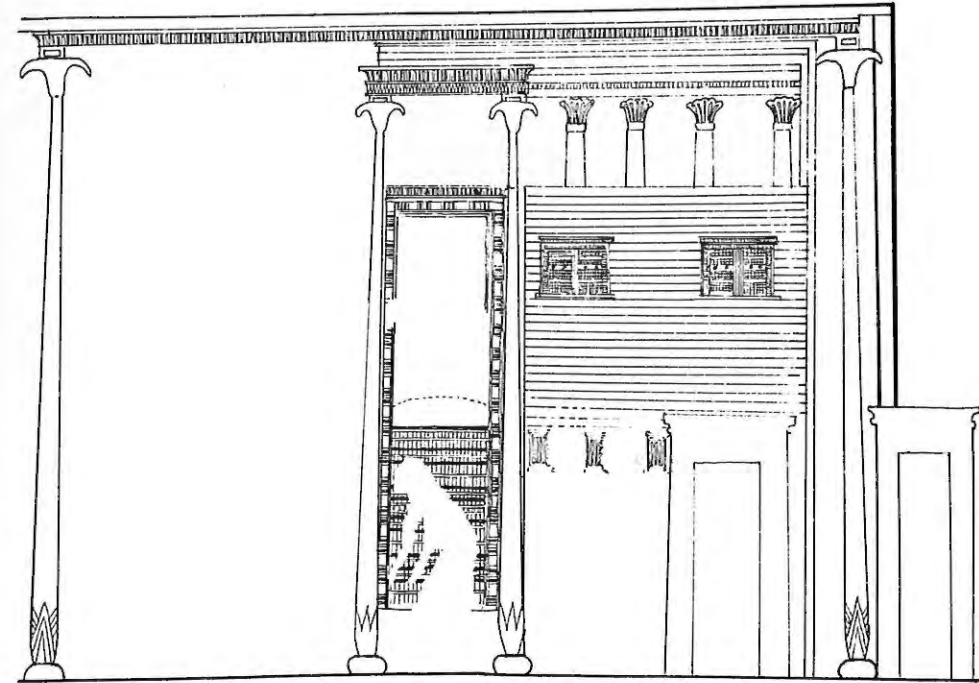
10. Restored perspective of the house of Nakht.

court. A large garden with an artificial pond and a kiosk or chapel extends behind the buildings.

Compared to this, the rest house is but a small structure of one or two stories, with one door to the north, an upper row of windows, and a pair of ventilators on the terrace. The structure is erected in the fields or orchards of the rich landowner who uses it during inspections of his property.

THE THEBAN TOWN HOUSE AFTER THE RESTORATION OF AMUN. Various elements introduced from the architecture of 'Amarna can be noticed in the houses represented after that period.

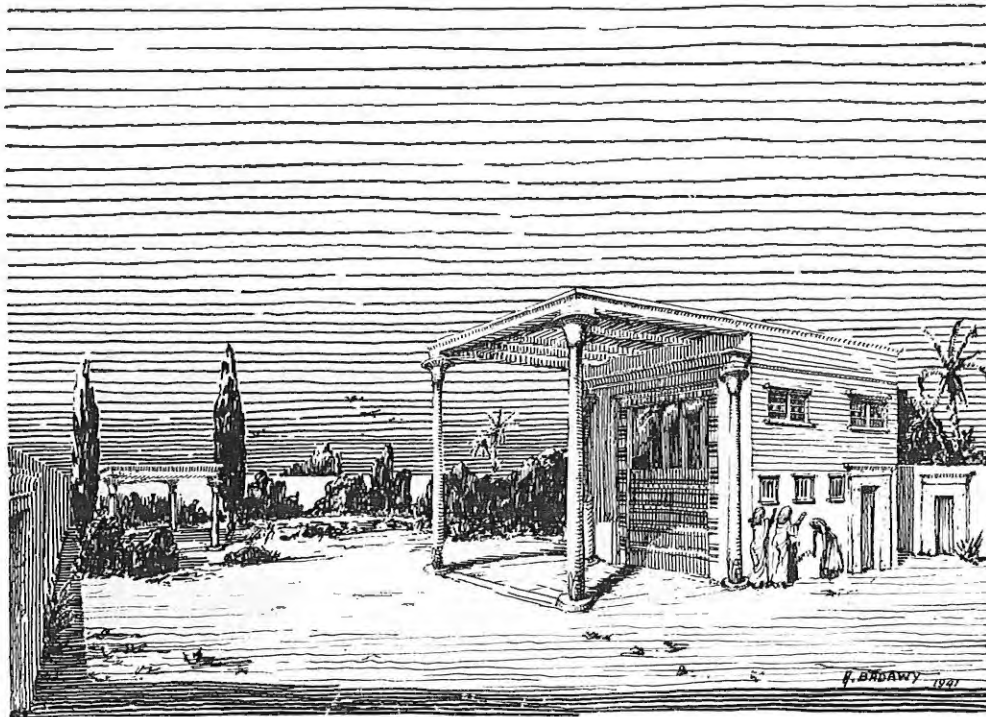
THE HAREM OF KING AY (TOMB OF NEFERHOTEP 40). In a corner of a huge garden stands a pavilion identified as the Harem of Ay. The painting is a compound of front elevation and side elevation, framed by two columns supporting the porch, but represented at either farther end to enclose the whole (fig. 11). The house is two-storied, with an entrance door at one corner and a second one at the back. It is characterized by the window of appearance, a feature often found in 'Amarna palaces, stretching along the whole front



11. Representation of the building for the Harem of King Ay from the tomb of Neferhotep.

façade. The four palmiform columns above the top of the walls are probably those of the hypostyle hall on the first floor, and are not to be seen on the façade. The graphic device by which the interior of an item is shown more explicitly above its exterior is much favored in Egyptian drawing (fig. 12).

The porch upon the four wooden papyriform columns is most elaborate and ornate and was to shade the window of appearance. Several restorations could be proposed, but it seems probable that the porch rose the whole height of the façade and its ceiling abutted on the front of the window of appearance, or continued over the whole structure (color plate I).

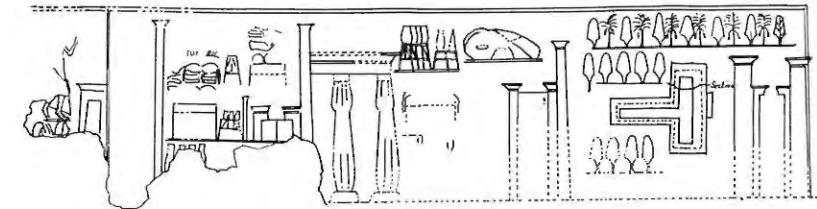
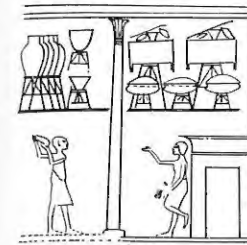


12. Restored perspective of the Harem of King Ay.

HOUSE OF MERYRE' II. The drawing gives in profile certain elements of a mansion. A first gateway, rabatted, opens onto a garden set formally, with a T-shaped pond shown in low relief in plan, bordered by two rows of trees. A second gateway leads onto a court, at the back of which stands the house itself (fig. 13). A porch on two (or four[?]) bundle columns shades the entrance. Beyond this, nothing but an open space enclosed within walls topped with a cavetto cornice is indicated. Behind it a doorway leads into what could have been a harem. On the top is a large hall with one or more palmiform columns. The entrance doorway with broken lintel and the corniced walls, seen in profile, are characteristic for the 'Amarna style.

The 'Amarna Period

Drawings in the tombs at 'Amarna provide a rich collection of representations of the royal domain, the palace, its landing quay, and windows of appearance of a most characteristic style.

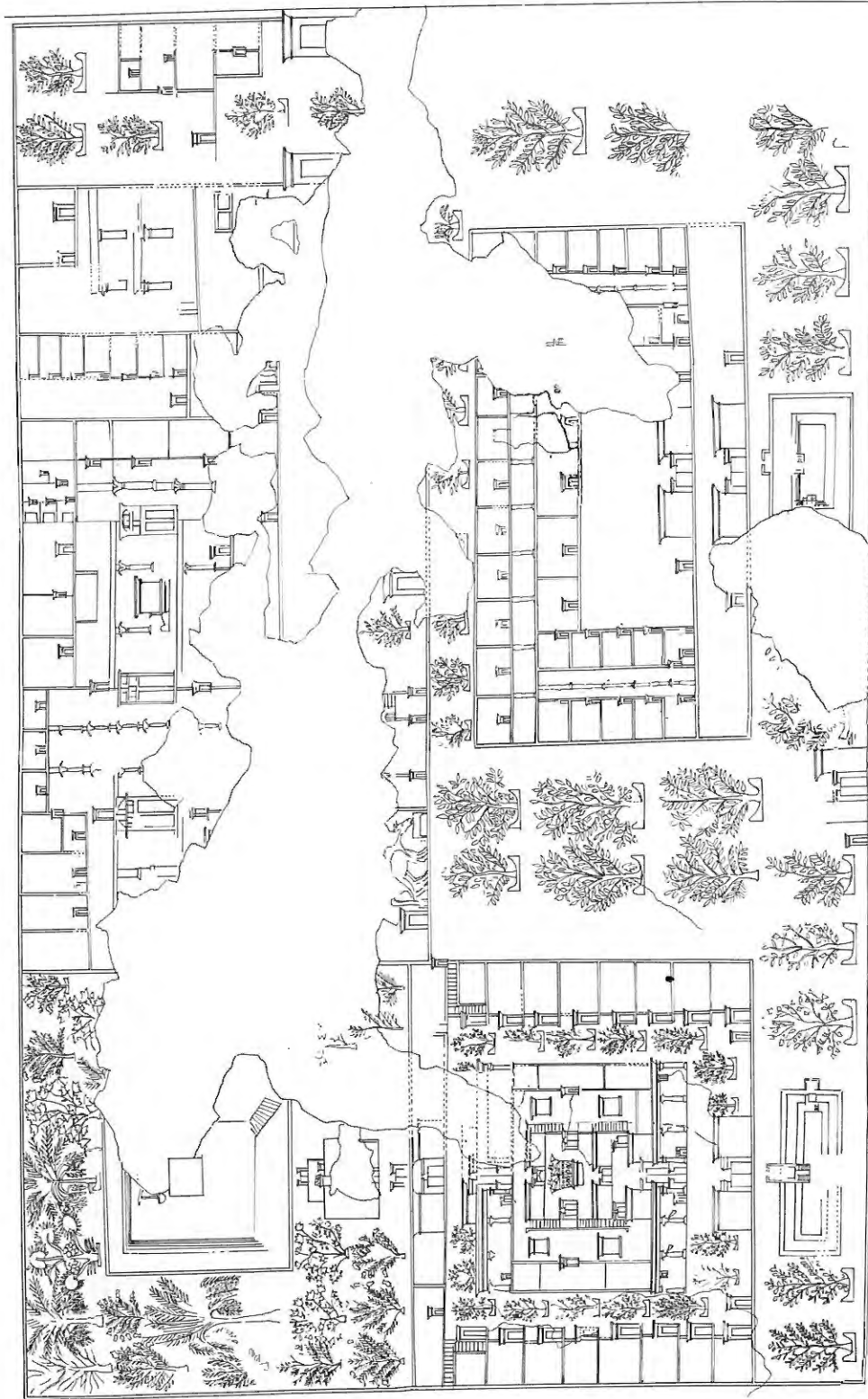


13. The mansion of Meryre' II at 'Amarna.

THE ROYAL DOMAIN (TOMB OF MERYRE' II). The scene showing the private house of Meryre' is adjacent to that of the royal domain. This large composition consists of the house of Meryre' with its stables, dependencies, magazines, and a large garden.

The drawing is a plan with doorways, columns, and altars represented in rabatted elevation (fig. 14). The house, shown at the top of the drawing, stands at the back of a garden. A courtyard bordered by two porticoes of eight columns each seems to form the center of the plan, and is flanked on either side by one of the public apartments. The fourth part of the plan is to the extreme right and features the bedrooms. The section to the right of the courtyard is grouped around a small court featuring a sun altar and bordered by two columned porticoes. A large doorway, opening in the wall opposite that of the entrance to the sun altar, leads into a hall with a central row of columns around which are the separate bedrooms, some with built-in masta-bas, or brick sofas, to be used as beds.

The dependencies, in the right lower corner, are on a rectangular plan, in front of which is a pond. Two identical portals, one behind the other, lead into a large court bordered on three sides by a row of contiguous rooms. Behind these three rows of rooms runs a corridor with a central row of columns which is accessible from both ends. The corridor is in turn bordered by an inner row of rooms.



14. Representation of the royal domain at 'Amarna from the tomb of Meryre' II.

The magazines, in the left lower corner of the drawing, are also fronted by a pond transverse to the axis of the main gateway. A court, bordered on either lateral side by a row of rooms, surrounds a central square block. In each of the farthest rooms a staircase ascends in two flights to the terrace. The square block in the center of the composition seemingly features a high pylon with two towers fronted by a portico with eight columns, at both the front and the rear façade. A row of rooms surrounds the precincts of the courtyard. In the latter a large central podium with an altar in its middle is flanked by two double stairways on opposite sides and by two windows of appearance on the two other sides.

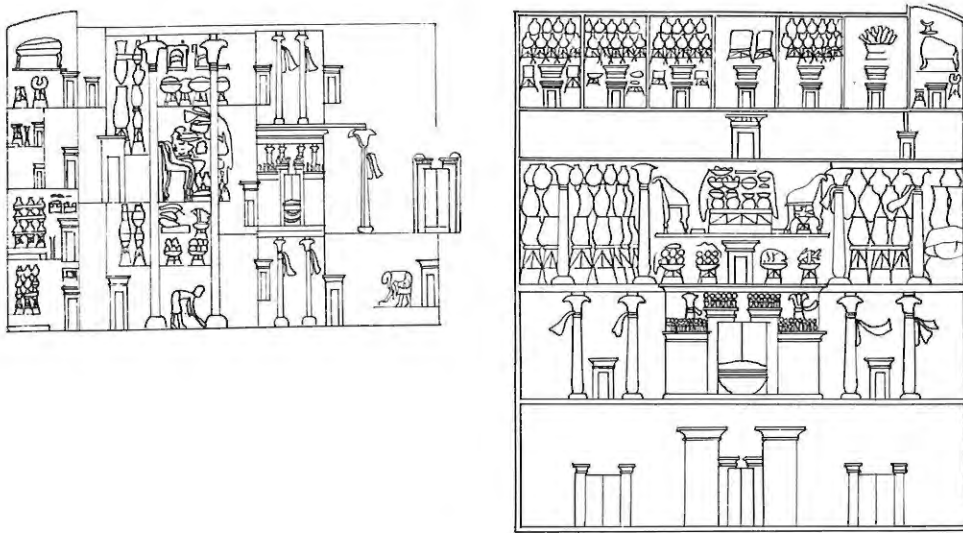
The garden beyond has a central square pond with sloping sides, a stairway in one corner, and a shaduf irrigating sweep along the edge of the innermost and deeper basin. Around the pond are rows of trees and a small chapel, a feature common to all garden layouts at 'Amarna.

THE PALACE. This is a favorite item in the repertoire of the tomb decoration at 'Amarna. No fewer than eight tombs of courtiers contain one or more (Meryre') scenes representing the royal palace. They are of two types, according to the two groups of tombs. The southern tombs show representations with elements piled up vertically one above the other, while the northern ones adopt a horizontal composition. A comparison of the various drawings with the plan restored from the actual remains is disappointing, since no concordance can be established. Certain elements that recur in all the drawings, however, point to their having been copied from nature. Such are the porch on two or four columns shading the window of appearance, the loggia with four columns similar to that found in the Harem of Ay, the stately hall used as dining room, and the private apartments separated from the former ones by an empty passage running transversely the whole width of the building. Among the various rooms that are invariably crowded with women dancing to joyful music, a large one set in the farthest angle is undoubtedly the pharaoh's bedroom, recognizable from the slanting roof of its ventilator as shown in section and the bed beneath it. The program is related to that of the mansion at 'Amarna.

TYPICAL REPRESENTATIONS OF THE PALACE FROM THE SOUTHERN TOMBS.

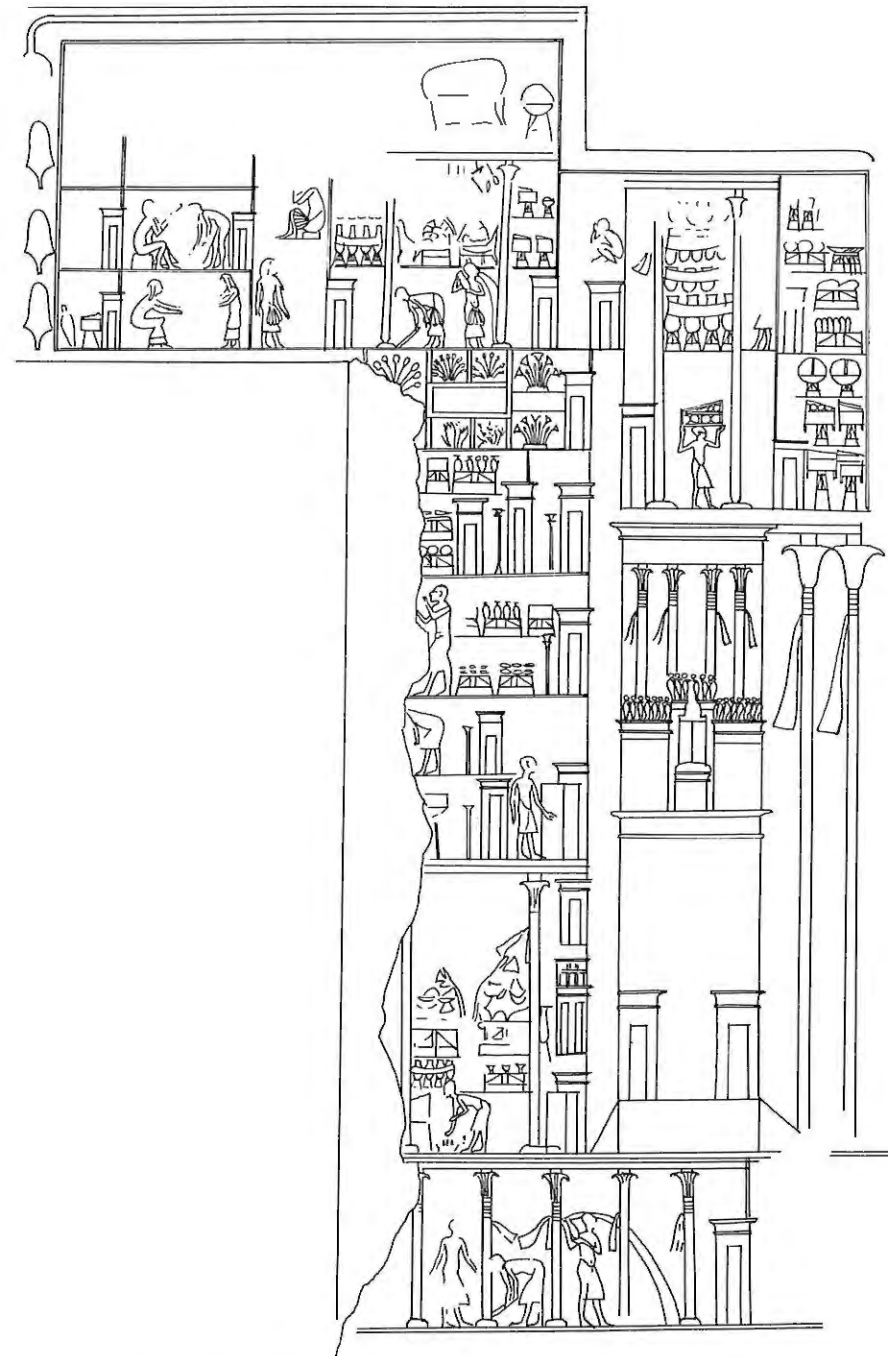
Meryre'. The two scenes of the palace from this tomb differ mainly in their mode of projection, one being a front view and the other a lateral one. A

principal gateway and two smaller ones open onto a transverse courtyard, the rear wall of which is faced with a window of appearance. Behind the latter is a loggia with four palmiform columns flanked by two porticoes (?) with two columns each. Only in the lateral view does a porch shade the window. Beyond there is a hall with four columns separated by the empty transverse corridor from the rear part of the structure. The rear part contains several storerooms and the royal bedroom, accessible through an antechamber and roofed over with a slanting ventilator (fig. 15).

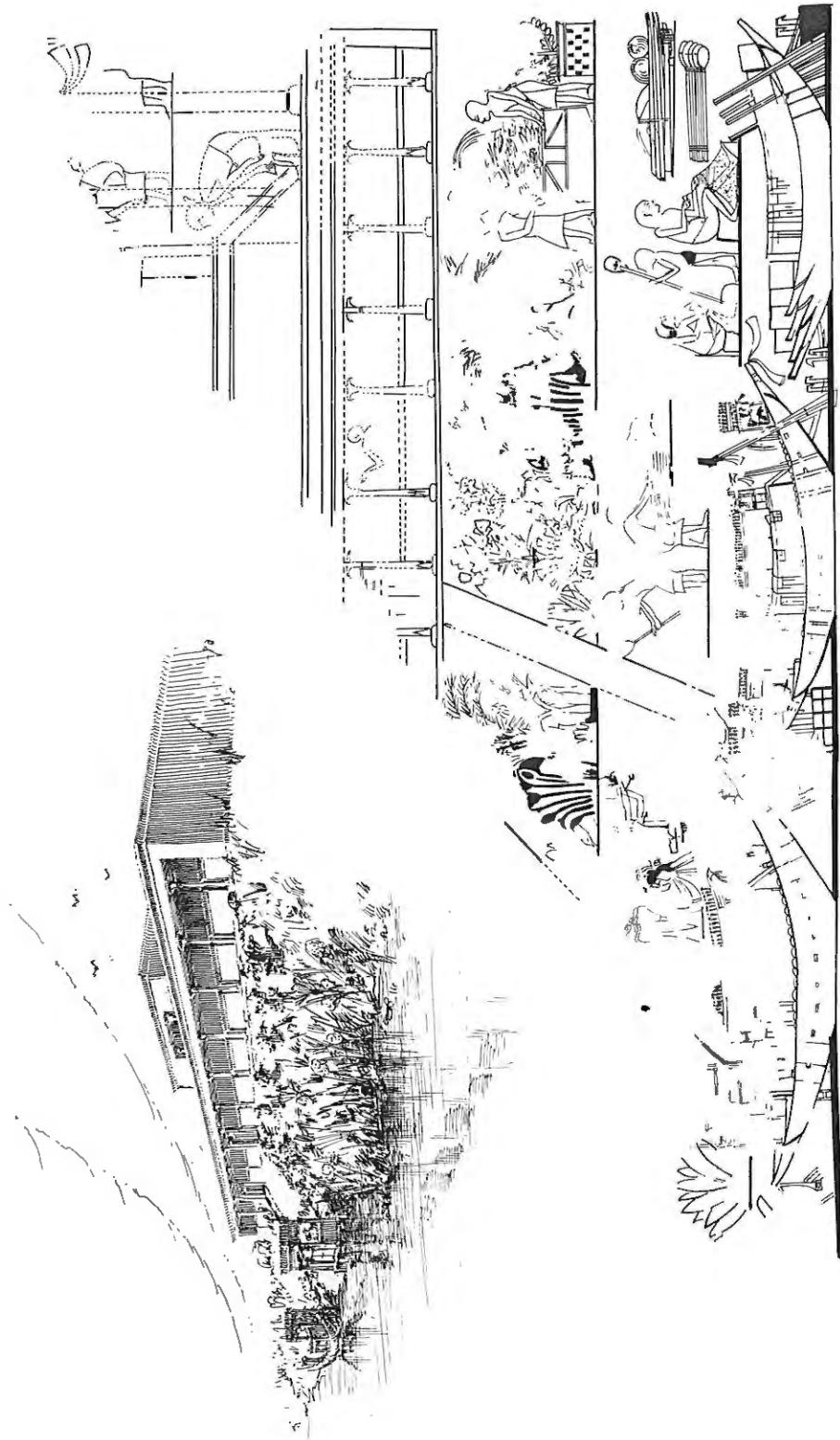


15. Two representations of the palace from the tomb of Meryre' at 'Amarna.

Tutu. Another type of composition is illustrated in the tomb of Tutu. The scene has been designed to frame the jamb and half the lintel of a doorway, and the elements are set in vertical bands. A portico on palmiform columns seems to form the front of the court. The window of appearance, shaded by a porch on two high palmiform columns, shown in side view, precedes a loggia with four columns. Farther behind is a hypostyle hall. The main hypostyle hall, to which two storerooms are annexed, is seen at the lower end of the second section. Among the rooms depending from the third section of the palace is one identified as the bathroom, featuring a central basin bordered with decorative water plants (fig. 16), adjacent to the living room. The royal bedroom is at the rear, behind a transverse corridor running in front of the suites for the ladies of the court and guarded by two eunuchs.



16. Representation of the palace from the tomb of Tutu at 'Amarna.



17. Representation of the landing quay of the palace and restored view.

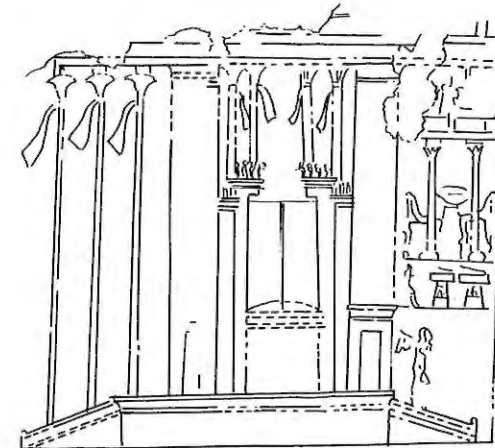
The landing quay of the palace. The royal ships landed at a special quay connected to the palace. A window of appearance shaded by a columned porch similar to that of the palace is shown above a portico, probably symmetrical, with two aisles of seven papyriform columns and a low intercolumniation screen wall topped with a frieze of uraei. From the doorway a ramp leads down the sloping riverbank to the kiosk on the landing platform. A second ramp of a lesser gradient descends to a similar edicule at some distance. This representation of two ramps of various gradients can be considered as one of the numerous "notations of perspective" in Egyptian drawings (fig. 17).

The window of appearance. This seemingly new feature is encountered for the first time in the 'Amarna Period. The pharaoh "appears" to his subjects and courtiers assembled in the court from a window or balcony which opens on the external façade of the palace.

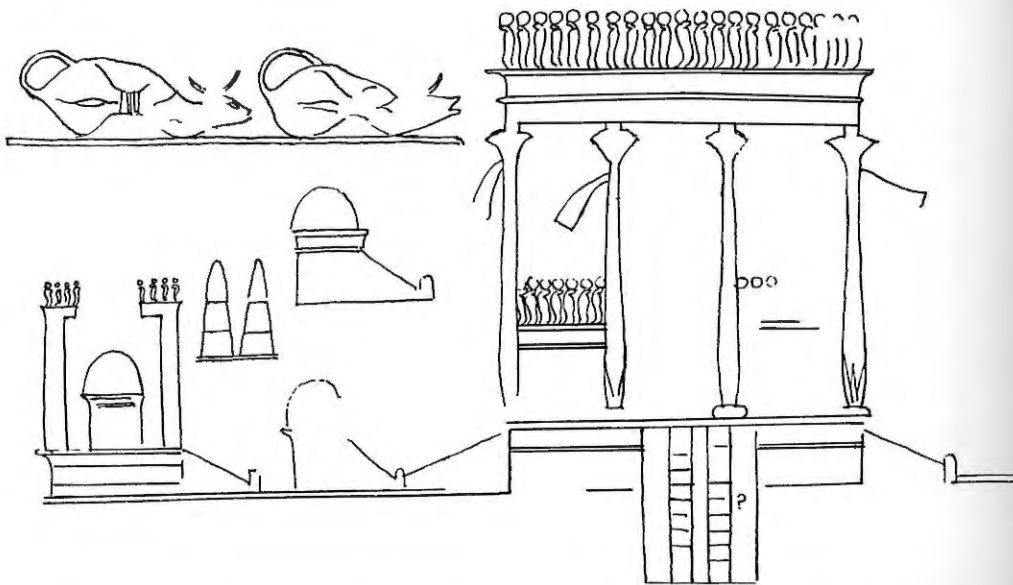
All representations in the tombs at 'Amarna agree in showing a vertical opening, screened in its lower half by a wall topped with the sill of the window and framed by two jambs with a broken lintel and shut by a door with two leaves. Above are the upper parts of the four papyriform columns supporting the ceiling of the loggia. Sometimes a porch on two to four columns is drawn rabatted in side view. A podium with two lateral stairs stretches along the base of the structure, at either side of which a door opens (fig. 18).

When compared with the drawing as restored from the actual remains of a window of appearance, this scene agrees in the basic elements. Such an element is still prominent in the program of later palaces (Ramses III at Medinet Habu).

18. Representation of a window of appearance at 'Amarna.



The kiosks. Certain edicules sheltering the royal family are in the shape of elegant kiosks erected on a platform to which ascends a stairway with a central ramp, or even three stairways (fig. 19). Four papyriform columns appear on every side, topped with an architrave with a cavetto cornice crested with uraei. An intercolumnar screen wall, also crested with uraei, runs between the lower parts of the columns. Nearby are two altars and a hypaethral temple or chapel, each accessible through its stairway.



19. Drawing from a tomb at 'Amarna showing a kiosk, a hypaethral chapel, and altars.

SOME STRUCTURAL ELEMENTS.

*Windows.*⁴² Although windows are usually shown in the upper part of walls, it seems possible to surmise that they often opened at eye level, especially in the upper stories. Such, at least, is the impression conveyed by two texts describing contemporaneous Syrian palaces. The Egyptian messenger Unamun reports on his visit to the Syrian prince at Byblos: "I found him sitting in his upper chamber, with his back leaning against a window, while the waves of the great Syrian sea beat upon his neck."⁴³ In the "Tale of the Foredoomed Prince" this hero watches the unsuccessful attempts of the youths who try to scale a tower and reach the window of the daughter of the Prince of Naharina: "And

the lad stood afar off and watched, and the face of the daughter of the Prince of Naharina was upon him."⁴⁴

Drawings seem to corroborate this assumption concerning the large windows in the upper stories, some of which have closely grated shutters in their lower part. The upper part seems to consist of variegated mats hanging behind a widely open grating (Nebamun, model) or with a colonnette as mullion (Thutnefer, Neferhotep, Sennufer, Nebamun). Thus a person could look at leisure from behind the windows of the upper stories through the grated lower part without being seen from the outside. This system was later used in the Islamic wooden *mashrabiya*. The Egyptian name of the window, "rolled-up-band," corroborates the interpretation of decorated windows (Nebamun, Neferhotep) as colored mats, as suggested by the drawings.

The small windows of simple design that open in the walls of the ground floor are closed with a vertical grating (Ineny, tomb No. 254, Neferhotep), sometimes cut at mid-height by a transverse bar (Tjoy, Nakht). They could have been worked in wood or stone, as those found at 'Amarna. Such sandstone mullioned windows with figures of divine hawks and hieroglyphs were used in the palace of Ramses III at Medinet Habu.⁴⁵

Doors. Architectural representations show various types of doors, from the simplest lintel set on jambs to the elaborate door with grilled arched transom (Neferhotep, Meryre') or the peculiar portal with broken lintel in 'Amarna. The usual type has vertical jambs and a deep lintel decorated with a torus molding and cavetto.

THE PALACES

Two types of palace must be differentiated: the one attached to a temple and used occasionally by the pharaoh when taking part in festivals, and the other built as his residence in his capital. No example of a temple palace dating from before the end of the Eighteenth Dynasty has been found. It is to be inferred that the appearance of the palace adjoining the mortuary temples in western Thebes would then correspond to the transfer of the royal residence to Lower Egypt in the Nineteenth Dynasty. Several pharaohs are known to have built such palaces: Ay at Medinet Habu, Ramses II in the so-called Ramesseum and at the temple of Hathor at Deir el Medina, Merneptah at Thebes, and Ramses

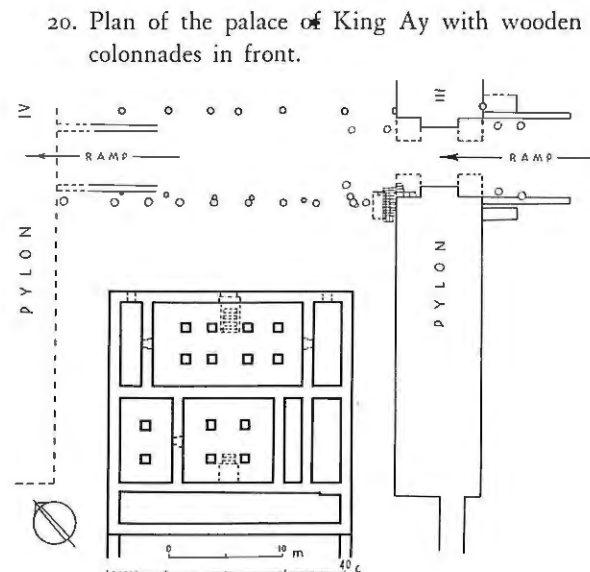
III at Medinet Habu.

Only a few residential palaces are known: those of Amenhotep III at Malqata south of Medinet Habu, Merneptah at Thebes, and Ramses III at Medinet Habu.

THE TYPICAL TEMPLE PALACE

The program of such a palace is reduced to the reception apartment set on a strictly symmetrical plan. A columned portico shelters the central part of the façade and a vestibule leads into a wide reception hall which precedes a square throne room and some subsidiary rooms on the sides. Both principal halls have varying numbers of columns. The second smaller hall is always square in plan and is used as a throne room. The throne is set on a dais in front of a double false-door in stone. A window of royal appearance opens in the façade. No building adjoins this type of palace, except a few small attached houses on a uniform plan for officials.

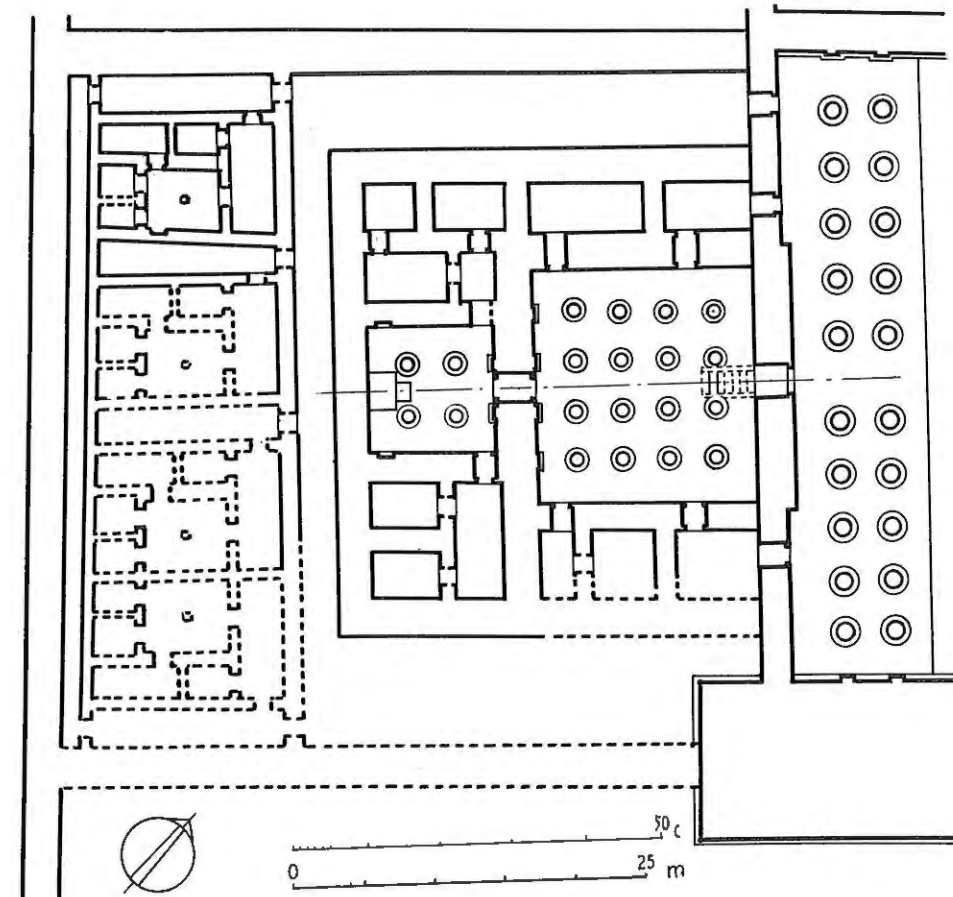
PALACE OF AY (MEDINET HABU).⁴⁶ This small building stood between Pylons III and IV in front of the mortuary temple of Ay at Medinet Habu and transversely to its longitudinal axis. Its plan is square (21.6 x 22 m.), nearly symmetrical, and features a broad reception hall, followed by a square throne room, both flanked by lateral chambers (fig. 20). A transverse corridor at the rear runs along the whole width of the building, a common precaution against robbers. The palace was of brick, plastered and whitewashed on the exterior.



Parallel to the front of the palace and on both sides of the central avenue of the temple there were two rows of wooden posts, probably forming a portico whose span across the avenue was equal to its distance from the palace façade (7.6 m.). The rows of holes still exist (1.2 m. deep).

PALACE OF RAMSES II (RAMESSEUM).⁴⁷ To the south of the first court of the mortuary temple of Ramses II in Western Thebes stood the temple palace, built in brick (42 x 20 x 10 cm.). Along the inner side of the court adjoining the palace runs a portico of two rows of ten columns each (fig. 21). The four middle ones in each row were papyriform, and the others palmiform. The window of royal appearance that opens in the axis of the façade is quite similar to that of the first palace of Ramses III at Medinet Habu. A rectangular window, crowned with a cavetto cornice probably crested with uraei, has a sill resting upon a row of heads of enemies, sculptured in the round and jutting out of the wall as brackets.

21. Plan of the temple palace of Ramses II in the Ramesseum.



The plan could be studied as an example of the harmonic use of geometrical proportions: the outline is square and both halls are also square, and the columnar arrangement is based on a square scheme. The whole project was imitated in the first palace at Medinet Habu, or both were related to a common prototype. The great hall has sixteen columns and is accessible through two side vestibules. A stairway between the two middle columns nearest to the façade ascends to the window of appearance. Two other rooms also open on the sides of the large hall.

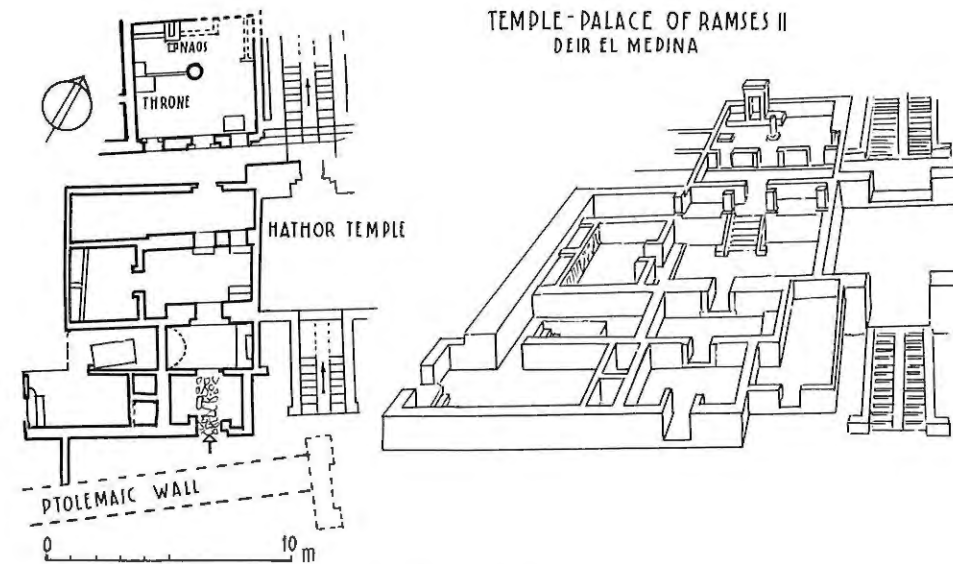
The second hall has four columns, and a small stairway leads up to the dais upon which the throne was set in front of a double false-door with stone facing. On either side is a suite of an antechamber with two rooms (E.) or three rooms (W.), accessible through a doorway from the front side of the throne room. The absence of an alcove for the bed, such as exists in the first palace of Medinet Habu, goes against the surmise that any living accommodation had been planned.

The palace is enclosed within an outer wall and is surrounded on three sides by an ambulatory. At the back is a row of four contiguous, uniformly planned, attached houses, probably for royal relatives or officials. The plan follows the typical tripartite arrangement of a dwelling: a wide vestibule accessible through a doorway at one end with a small side room connected with a square living room having a central column. Beyond the living room are three rear chambers, one of which is the bedroom.

PALACE OF MERNEPTAH (THEBES).⁴⁸ The plan of this palace is a simplified example of the nearby palace of Ramses II (Ramesseum), featuring the basic elements: two vestibules, a reception hall, and a throne room, with dependencies.

PALACE OF RAMSES II (DEIR EL MEDINA).⁴⁹ Abutting against the southwest corner of the temple of Hathor at Deir el Medina is an Eighteenth Dynasty chapel (Horemheb[?]), rebuilt by the vizier Pesiur and the scribe Ra'mose as a royal palace. It is called *Khenu* ("The Interior"), according to its inscriptions and could have been a temple palace for Ramses II, either when he came to visit Hathor in the adjacent temple which he rebuilt for her, or perhaps for his statue.

The plan is symmetrical, with rooms projecting on the western side (fig. 22). A court precedes a transverse hall whose vaulted roof was painted with a



22. Temple palace of Ramses II at Deir el Medina in plan and restored perspective.

vine. A platform runs along the east wall. A central doorway opens onto a transverse hall, whose north wall was originally a row of pillars on a platform (a pronaos). A side chamber (W.) contains a platform with a series of altars represented on its face in painted high relief. The original pronaos communicates by a doorway in its rear wall with a transverse court. Beyond the latter is a large square room with three doors on its façade, a central sandstone column, a dais for the throne abutting on the west wall, and a naos and a platform along its north wall. This well-built room, with carved and painted door-frames, was added by Ramses II to transform the chapel of the Eighteenth Dynasty into a small temple palace connected to his temple of Hathor. There were two excavations under this room, the deeper being a shaft in which were found statues and stelae of the royal scribe Ra'mose. The dimensions of the column (0.15 m. base, 1.60 m. shaft, 0.35 m. capital and abacus) would give *ca.* 2.15 meters as height to the ceiling.

All the floors were paved. Plastic decoration consisted of mud plaster modeled in relief and painted to represent altar stands along the front of the built-in offering-tables. Walls were painted with figures on a yellow ground, yellow figures on a white ground. A white dado surmounted by a broad band

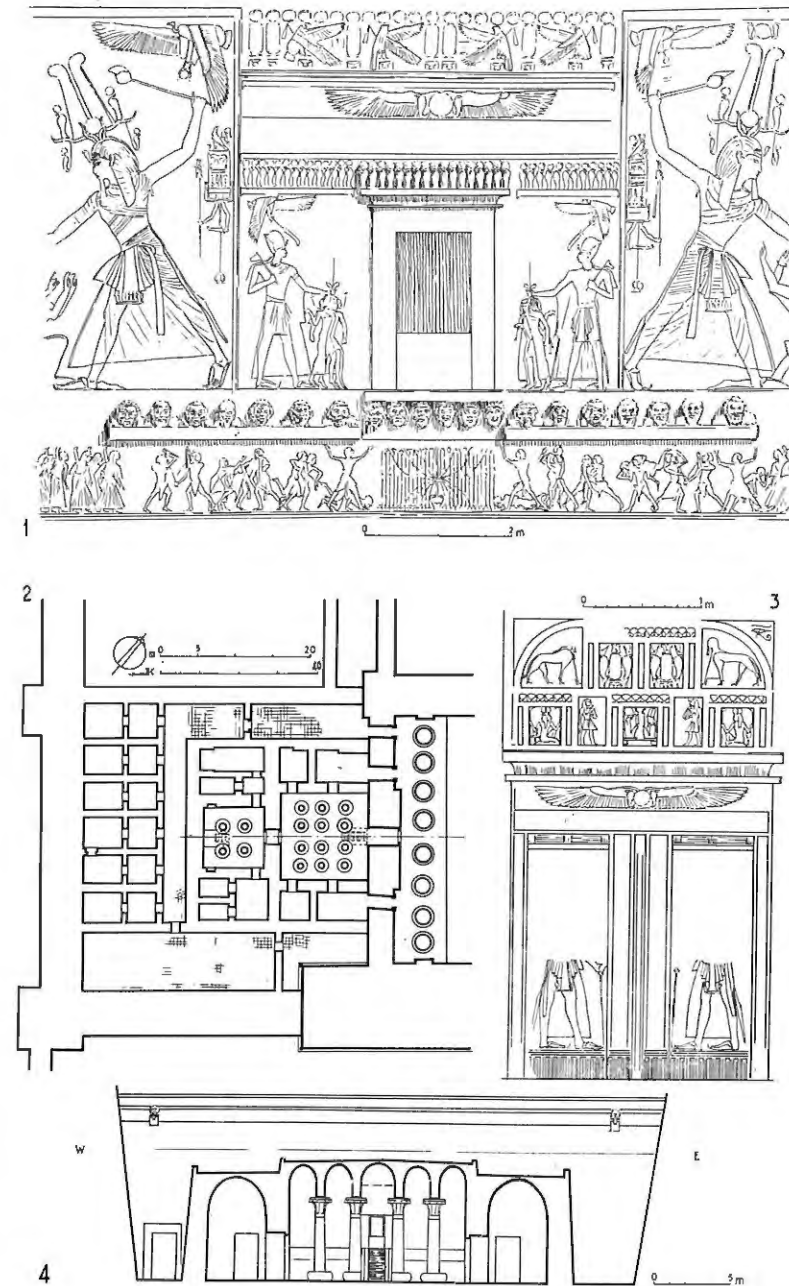
in black ran along the bottom of the walls. The vault of the second room from the entrance was decorated with a trellis of vine and grapes on a yellow ground, a motif occurring also on the vaulted roof of the tomb of Sennufer at Deir el Medina.

THE FIRST TEMPLE PALACE OF RAMSES III (MEDINET HABU).⁵⁰ Ramses III built a palace whose façade formed the south side of the first court of his temple at Medinet Habu. Later he razed it completely except for this façade, and rebuilt it on a different plan. Both palaces, although about two centuries later than 'Amarna, are of the type of the 'Amarna mansion.⁵¹

The plan shows a strong resemblance to that of the palace of Ramses II (Ramesseum). It is also on a square general plan with the two square halls in the axis of the window of appearance and several side chambers (fig. 23). The whole structure is of brick (42 x 20 x 12 cm.), with stone doorways and columns. The façade on the first court of the temple, behind a portico on eight papyriform columns, consists of a protruding central window of appearance, flanked by two symmetrical entrances to the vestibules and two side doorways to the court surrounding the palace. The window opens at a man's height and has a row of heads carved in the round as consoles beneath the sill and on both sides, representing prisoners lying prone under the feet of the pharaoh. The jambs and lintel of the window were gilded and crowned with a cavetto cornice crested with uraei. A wooden railing was fixed between the doorjambs. On both sides low reliefs represent the pharaoh holding groups of prisoners, and a frieze of pairs of wrestlers—an Egyptian and a foreigner—shows the final victory of the Egyptian, who greets the pharaoh with both arms raised.

Access to the reception room is through two side vestibules. It is noteworthy that the intercolumnar space between the rows of columns in the hall, both in front of the two side entrances and along the main axis, is larger than that between the others to ensure easier traffic between these rows. The twelve columns are set in three transverse rows, each of four papyriform columns with large bases, built on mud-brick foundations (1.5 m. square). They carry architraves parallel to the longitudinal axis, and between two central columns at the front a stairway ascends to the dais of the window of appearance that opens in the thick wall of the façade. A small side room is set behind either vestibule.

The second hall is the throne room and has four columns in two rows, a dais in the center of the rear wall accessible from a small stairway, and a



23. First temple palace of Ramses III at Medinet Habu: 1, restored elevation of the window of appearance; 2, restored plan; 3, double false-door from the throne room; 4, restored cross section.

double false-door set in the wall behind the throne. The false-door is decorated with fine low reliefs, beautifully painted, representing the pharaoh as if he were coming forth from the private apartment behind the throne room. The transom above the cornice is elaborately decorated with panels showing the pharaoh and deities. According to the restoration the columns carried architraves parallel to the longitudinal axis and from which sprang the usual high vaults.

On either side of the throne a doorway opens onto a lobby connected to two chambers. In the north suite one of the chambers is a large bedroom with the typical alcove.

Along the rear wall of the court runs a series of six contiguous and uniformly planned suites of pairs of rooms (10 x 5 = 50 sq. m.), possibly to accommodate courtiers or officials.⁵² A pavement of square mud-brick slabs (43 x 43 x 6 cm.) covered the court and rearmost rooms. Some stone elements were carved in low relief.

THE SECOND TEMPLE PALACE OF RAMSES III (MEDINET HABU).⁵³ In the plan of the later palace the throne room was enlarged and the reception room reduced to a room for the balcony of appearance. The symmetry was not so strict as in the first building (fig. 24).

For the earlier window of appearance there is substituted a balcony on a dais protruding under the façade portico and covered with a wooden canopy on wooden columns and gilt screens rising to half the height. Two stairways ascend symmetrically along the back wall of the façade to the platform. The reception hall is nothing more than a transverse narrow vestibule with two columns accessible from two entrance lobbies and leading into the large throne room, which is now an imposing hall with two rows of three palmiform columns each. At the back of this hall a vestibule communicates on the one side with a small hall with two columns and an alabaster dais for the throne, and on the other with a room and a bathroom. Farther on is a bedroom with an alcove for the bed. From the large throne room a corridor leads to the transverse passage between the palace and the private apartments of the harem. These are three attached suites on a uniform tripartite plan. Each has a vestibule and a living room, to the rear of which are a small room and a bathroom. Here, probably, dwelt three royal concubines. The public harem apartments were accessible from the main throne room and from the trans-

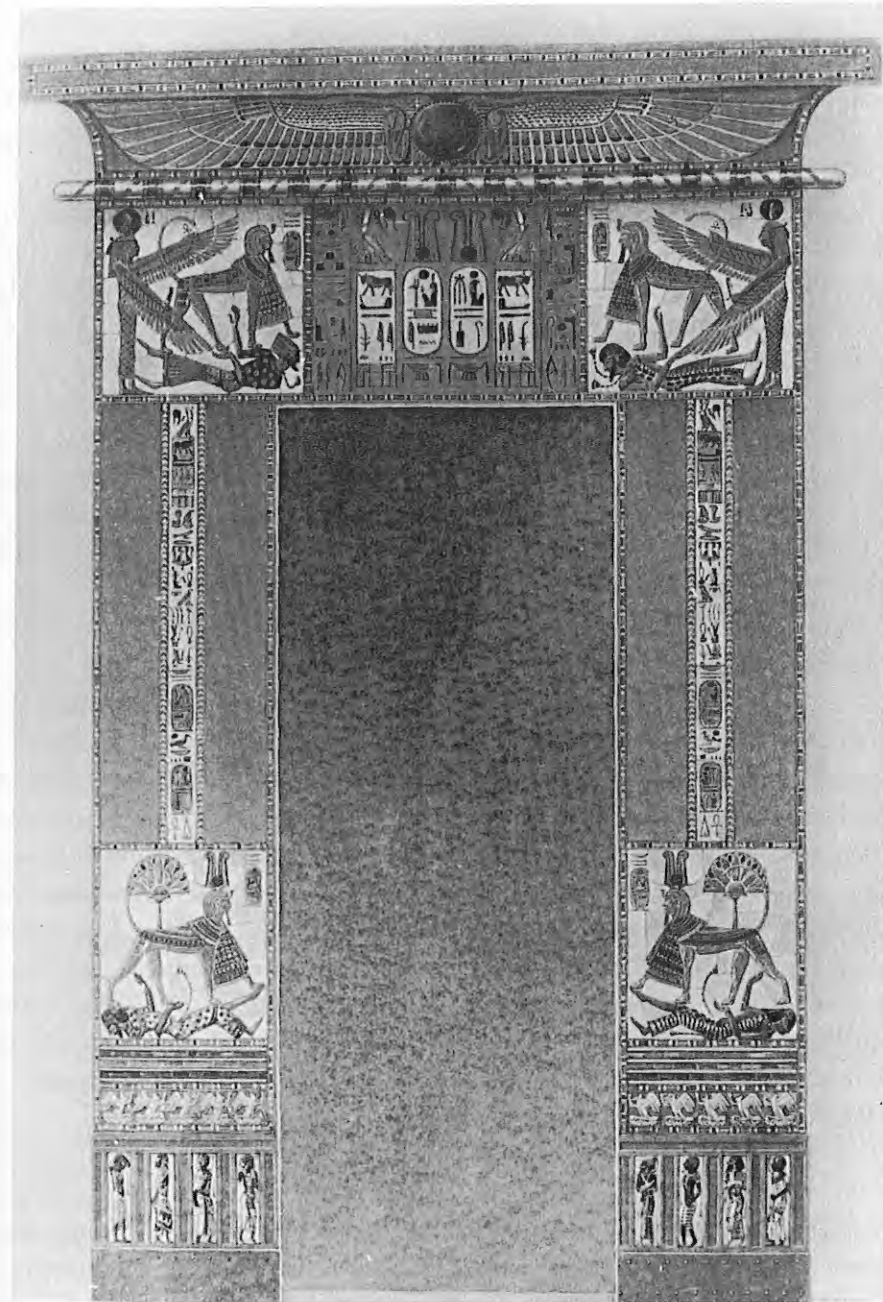


Plate 1. Right entrance to the temple palace of Ramses III, as restored by Hölscher.

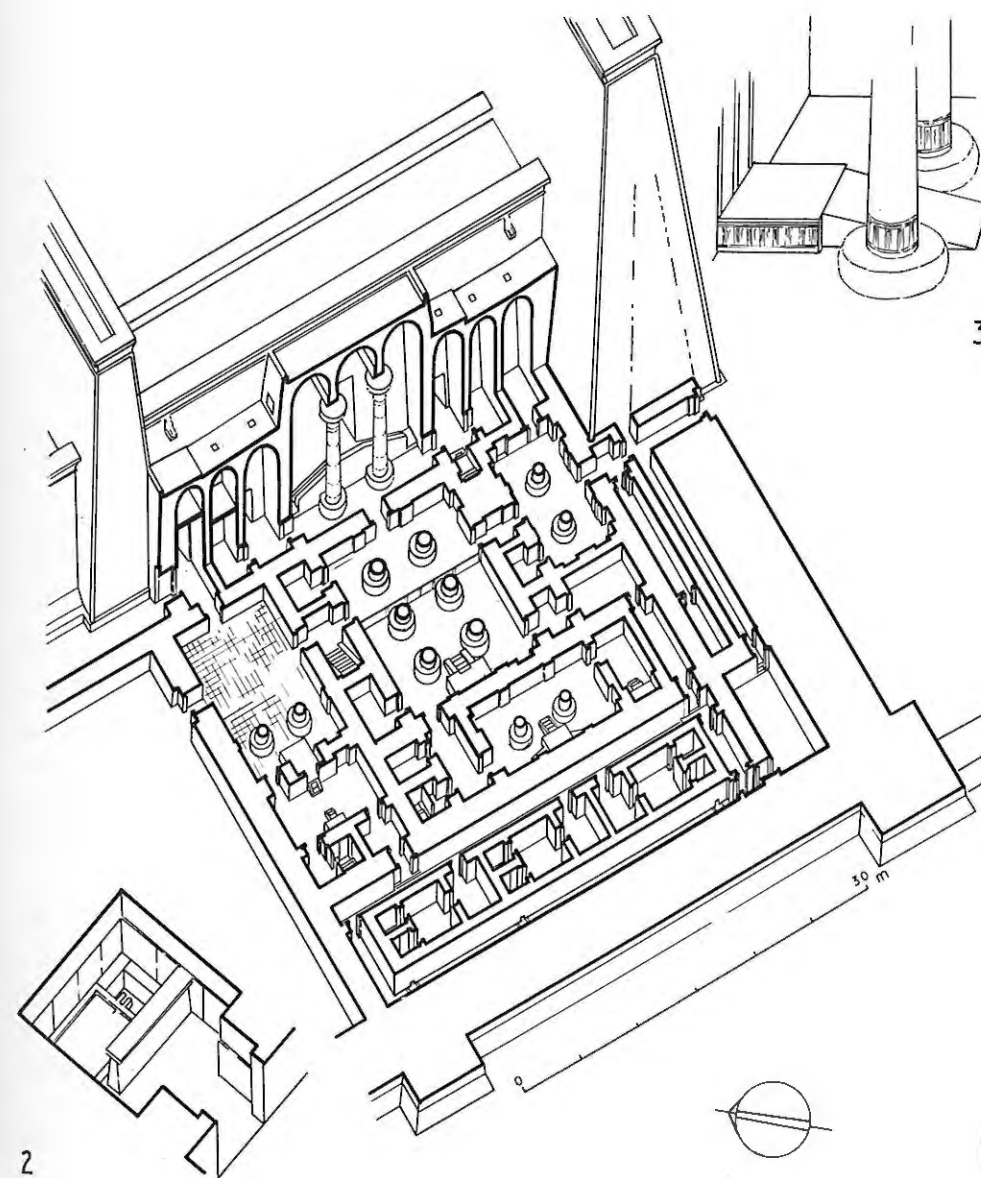
verse passage, and consist of a court with a portico on two columns at the rear, a window of appearance opening in the reception hall which contains a throne, a bathroom, and two lobbies. There seem to have been two stairways rising to the roof. A side vestibule opened from the throne room to the exterior of the First Pylon.

Some characteristic features of this remarkable building are noteworthy. In the bathrooms an ingenious arrangement of a screen wall insures privacy, even when the door remains open. The floor is of one single stone slab provided with a ledge and a gully which pours into a deep basin. Walls are lined with stone slabs (1.7 m. high). Symmetry is obvious in the arrangement of niches opposite doorways in the throne room, the smaller throne room, the harem portico, the reception hall, and the lateral vestibule.

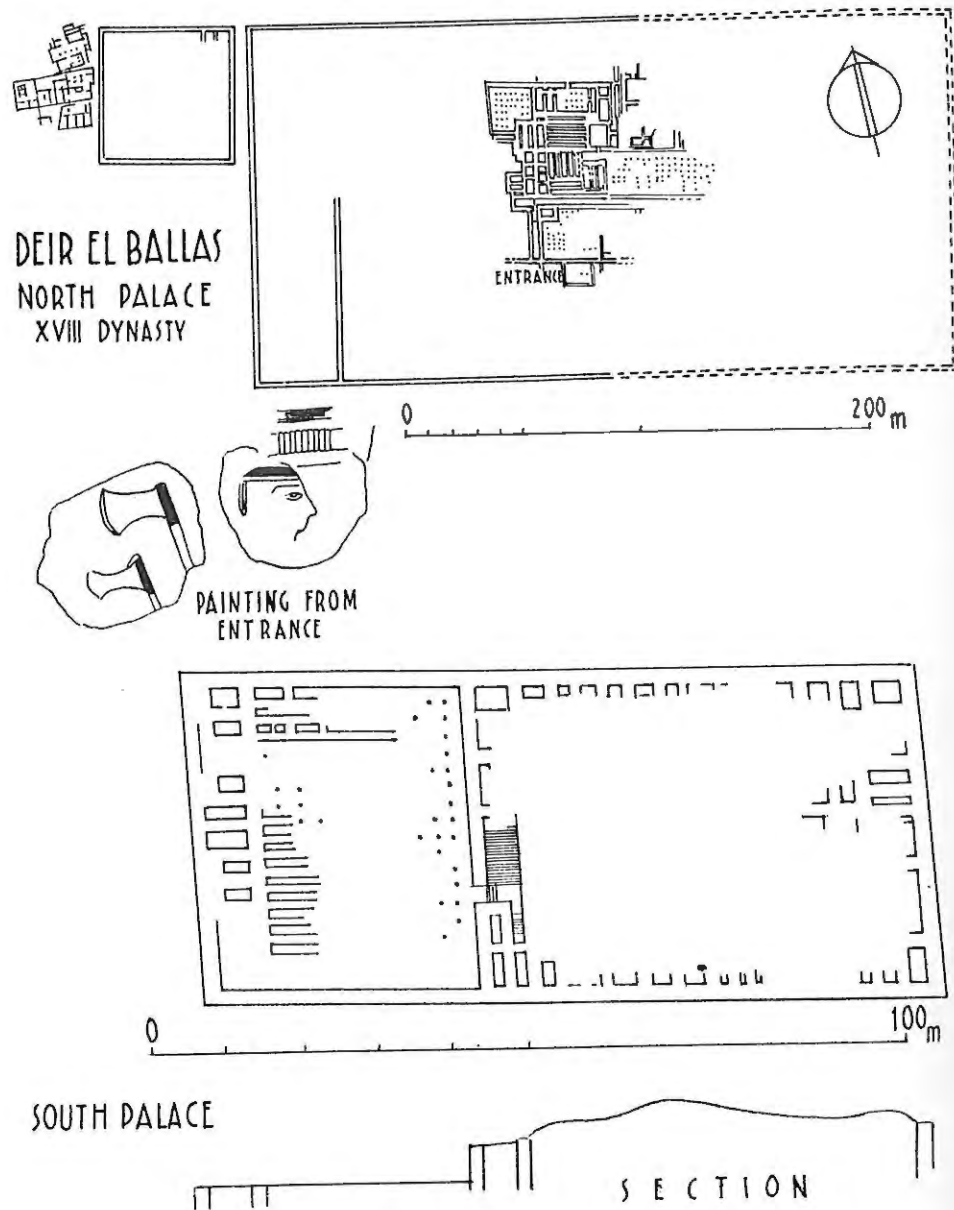
The seclusion of the harem inmates could be secured by numerous doors closing narrow passages, while the whole harem building was surrounded, as a measure of precaution, by an ambulatory running along all sides. At every entrance a small room served probably as guardroom.

Ornamentation made a constant use of pigment applied thickly on reliefs or on plastered brick walls or even stone, covered with gesso (1 mm. thick). The technique of inlay, known since Thutmose III, was extensively used here by Ramses III on doorframes. This remarkable feature is best exemplified in the entrance doorway to the palace in a symmetrical composition beneath the winged sun disk of the cavetto (pl. 1). A square panel just above each doorjamb depicts a goddess protecting with both winged arms the royal sphinx treading on a prisoner lying prone. The same subject, but without the goddess, is repeated in the lower square panel which is separated by several ornamental bands from a bottom dado consisting of four plaques, each representing a standing foreign prisoner. Despite the small size and the technical difficulties inherent in faïence work, all the ethnic characteristics and the typical variegated costumes are rendered with the astounding accuracy of excellent artistry (color plate II).

THE TYPICAL RESIDENTIAL PALACE. From their rather scanty remains, only an inadequate idea of residential palaces can be derived. It appears that the main division into public and private apartments governs the layout. Symmetry is also important. The reception apartments are directly connected to the residence of the pharaoh and consist of several columned halls and a throne room, similar to the program of the temple palace. The dwellings for the harem are



24. Second temple palace of Ramses III in his mortuary temple at Medinet Habu: 1, axonometric view of plan; 2, royal bathroom; 3, throne dais in great hall.



25. Plans of the two palaces at Deir el Ballas

set symmetrically in the shape of contiguous, uniformly planned suites about a central hall connected to a throne room.

THE TWO PALACES AT DEIR EL BALLAS ([16 KM.] SOUTH OF DENDERA).⁵⁴ The two palaces, which probably date from the early Eighteenth Dynasty, are about 800 meters from each other. Both are rectangular structures with a central higher building fronted with columned halls at a lower level (fig. 25).

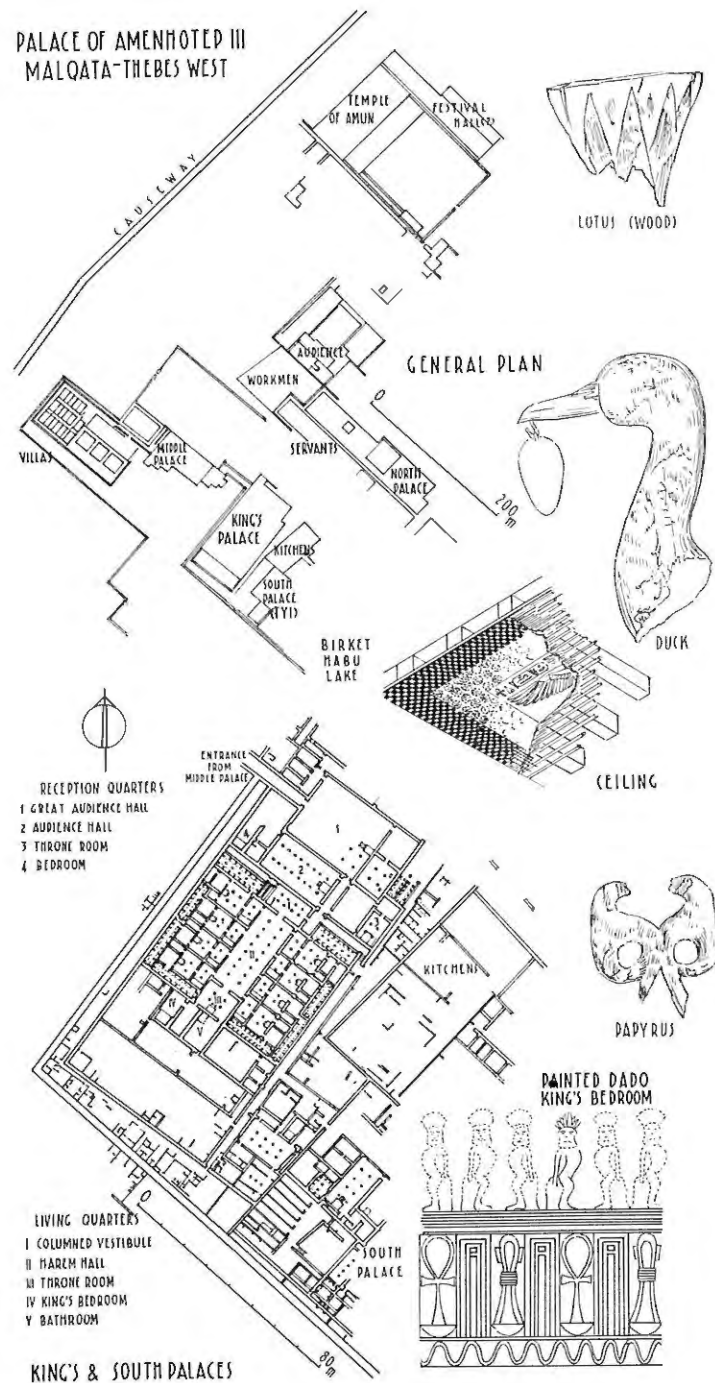
The north palace has a rectangular enclosure about 303 meters x 156 meters. The layout of the building features a central many-storied nucleus with thick walls and long compartments about which abut several halls with many rows of columns supporting a timber ceiling. The latter type of hall resembles that of the coronation hall at 'Amarna, or the Persian apadana. It would be safe enough to picture the central high structure as a fortified keep or dungeon, surrounded by hypostyle halls forming the reception quarters. Fragments of paintings representing a guard were recovered in the entrance.

The south palace is much smaller (*ca.* 100 x 44 m.). In the eastern lower part a hall with wooden columns on stone bases was laid out on a foundation of brick caissons. To the west an unusually broad staircase with a secondary lateral flight lead up to the residential quarters, probably a many-storied complex.

THE PALACES OF AMENHOTEP III IN WESTERN THEBES (MALQATA).⁵⁵ It is quite in accordance with the luxury-loving character of Amenhotep III that such a huge complex of four palaces, kitchens, dependencies, and pleasure lake would be carried out. Egypt was at the peak of its power, and riches were pouring in from the remotest vassalages of the Empire.

The choice of a location in the desert plain of Western Thebes, southwest of the mortuary temple of the pharaoh, could perhaps be related to the favor shown by the royal couple, and especially by Queen Tiy, to the sun and probably the other aspects of nature. This ideology was only a forerunner of the cult of Nature and the sun disk by their son Amenhotep IV-Akhenaten at 'Amarna.

The main structure, the palace "House of Rejoicing" of the pharaoh (fig. 26), was begun in the eighth year of his reign, and the lake (about 2 miles [3.2 km.] in periphery) for Queen Tiy, in the eleventh. Although an account of the digging of the lake in the short time of 15 days occurs on several heart scarabs, the dimensions given do not correspond to those of the T-shaped



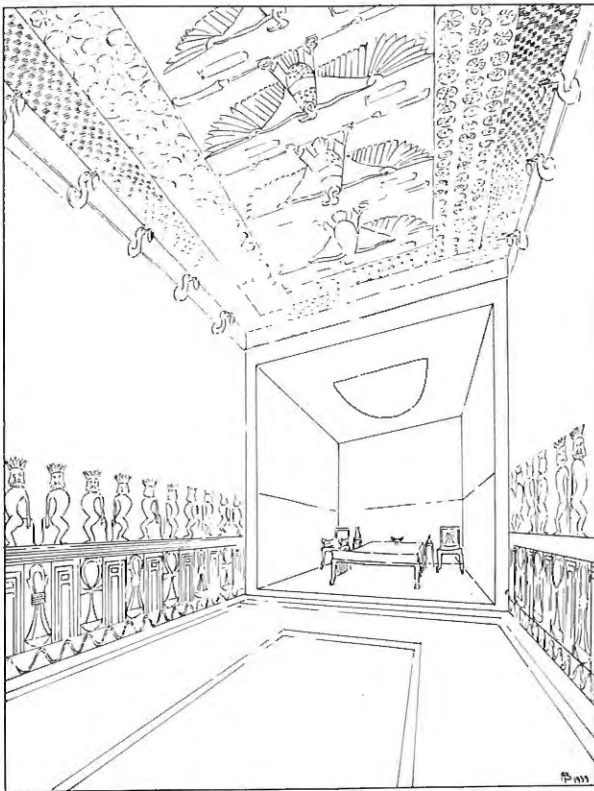
26. General layout and detailed plan of the palace of Amenhotep III at Malqata, and details of the decoration.

depression still recognizable in Birket Habu (Arabic, "Lake of Habu") with its channel running east which once connected it to the Nile. The lake has been lately identified as the landing quay and harbor to the royal palace. The palace of Amenhotep III was accessible from the middle palace through a wide corridor. The general layout features a rectangular enclosure entirely surrounded by a passage for patrols of guards. The plan is of the tripartite type: reception quarters to the north, living quarters in the middle, and private apartments at the rear.

The reception quarters consist of a large squarish hall (1)⁵⁶ with many rows of columns in wood and a throne dais set along the axis of the entrance corridor, a second smaller hypostyle hall with a throne dais near it (2), a throne room (3), and a bedroom (4).

The living quarters form a rectangular complex between two transverse walls running the whole width of the palace. They are accessible from the reception halls through a vestibule (I) and from a separate corridor and stairway leading down to the exterior. Here the plan is strictly symmetrical. The vestibule (I) with rows of columns leads onto a central hall (II) with two rows of columns, flanked on either side by a series of four attached suites, probably for the women of the harem, and ending south in a throne room (III). Amenhotep III seated in state on his throne was depicted on either side of the doorway to the throne room as he would have appeared in reality through this doorway. Behind are the private apartments: a royal robing room and bedroom (IV) and a bathroom (V) connected to the throne room and other chambers. Each of the suites bordering the harem hall and opening onto it was an independent dwelling (22 x 8 m.),⁵⁷ also on the tripartite plan current in the New Kingdom. The transverse entrance vestibule had two columns and a water slab for jars. The central living room with two or four columns probably carrying a higher ceiling featured a throne dais at the back and was connected to a small cubicle, probably a latrine, and on the other side to a bedroom and its robing room. Along the walls of the robing room ran a low wooden shelf for clothes, set on transverse walls painted with animals, such as a lively calf galloping in a meadow.

Construction was of brickwork, plastered and painted with ornamental plinths and genre scenes above, such as court ladies, desert animals (2), the pharaoh on his throne (III). Ceilings were of timber rafters covered beneath with lath, and plaster, and painted with a series of protecting Nekhebet



27. Restored perspective of the bedroom of Amenhotep III in his palace at Malqata.

vultures in the official halls (1, II) and in the bedroom of the pharaoh (IV) (fig. 27), or with vines within a frame of rosettes and checkered pattern, spirals, and bulls' heads (pl. 2), similar to Aegean ornament. Floors were decorated in the same technique to represent a pool with papyrus, lotus, and fowl (II). Large scenes appear on the wall of the second audience hall (2), such as a large figure (min. 4.6 m. high) of a lady wearing an elaborate headdress of flowers. On the wall behind the dais are depicted wild animals in the desert while on the floor of the dais itself and on the treads of its steps are painted bound captives and the nine-bow pattern representing the traditional enemies of Egypt. In the smaller audience hall (3) the floor resembles a water basin filled with fish, aquatic plants, swimming ducks, geese, and land birds bordered by papyrus and plants shown in rabattement. The throne, built of a brick core sheathed with sandstone painted a brilliant yellow, is approached by alternate rows of captive Asiatics and Negroes and bows. The walls, however, are not painted perhaps because they were lined with hanging mats or rugs.

The dadoes consist (from the bottom) of a band with an undulating white line, a band of rosettes or a recessed panel alternating with the hieroglyphs for "life" (*ankh*) and "protection" (*sa*) surmounted by a mural

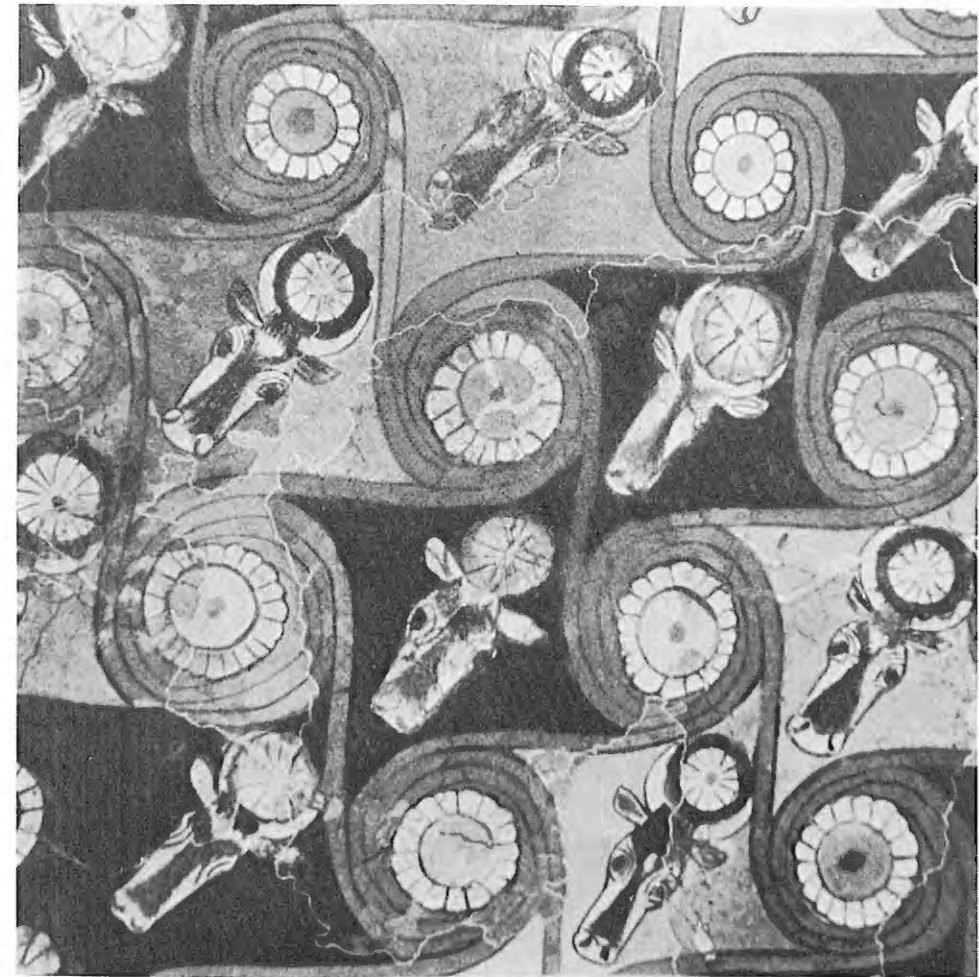


Plate 2. Painted ceiling of the pharaoh's robing room (palace of Amenhotep III at Malqata).

depicting dancing Bes figures (vestibule to hall 3) or in pairs of confronted profiles (bedroom of Amenhotep III). In other dadoes flowering plants form a vertical pattern. Rosettes appear as narrow bands between decorations, or in

contiguous rows bordering a central design, or in the interstices of a spiral pattern, or around the vultures of the ceiling. There is planned increase in the color intensity from the dull floors (usually gray-blue and white), to the black and red dadoes, then to bright and strong color contrast in the frieze, to its highest note in the dazzling ceiling. The eye is thus led upward by the design and colors.

The technique of painting is similar to that of the fresco for the background, painted with general masses on wet plaster, and to that of the tempera for the details added later. This was applied to a thick layer of plaster coated with stucco. Mud moldings in the shape of a cavetto, or wood carved into grapes or ducks' heads holding bunches of grapes would be set just below the frieze at the top of the walls. Wooden gratings carved in openwork as two papyrus-stems or a sphinx would be set in the clerestory windows in the main halls (I, II). Glazed blue tiles and hieroglyphs were also used in ornamentation. Wooden lotus buds and open flowers formed part of the capitals of the columns, probably to be restored. (color plate III) as the usual composite types of staged lotus, iris, and papyrus frequently shown in contemporaneous paintings or even modeled in plaster on the sides of pillars (Medinet Habu). Although they are in a fragmentary state, the elements of ornamentation give an impressive idea of the magnificent style and refined craftsmanship of the royal palace of one of the richest Egyptian pharaohs.

The south palace of Queen Tiy (fig. 28) consists of an apartment with an entrance hall, a throne room with two doorways, one (east) leading onto a lobby fronting a bathroom and bedroom suite with the characteristic alcove, and the other (west) to two large columned halls with benches or shelves around the walls. Two parallel long galleries border the south side of this residence and across these there seems to have been provision for individual housing units. These units were laid out symmetrically in pairs about either side of transverse corridors of access, opening onto one of the two galleries. One curious feature, perhaps unique, was the blind corridor or cul-de-sac running along the side and the back of the units, so that each of these was thoroughly isolated, without any common walls whatever. A similar device for control is found about eight centuries later in the harem suites at Persepolis.⁵⁸ The unit is of the usual tripartite type, with a winding entrance, a columned living room, and two unequal rooms at the back.⁵⁹ The inmates of these apartments, possibly harem women, were certainly guarded securely in complete isolation.

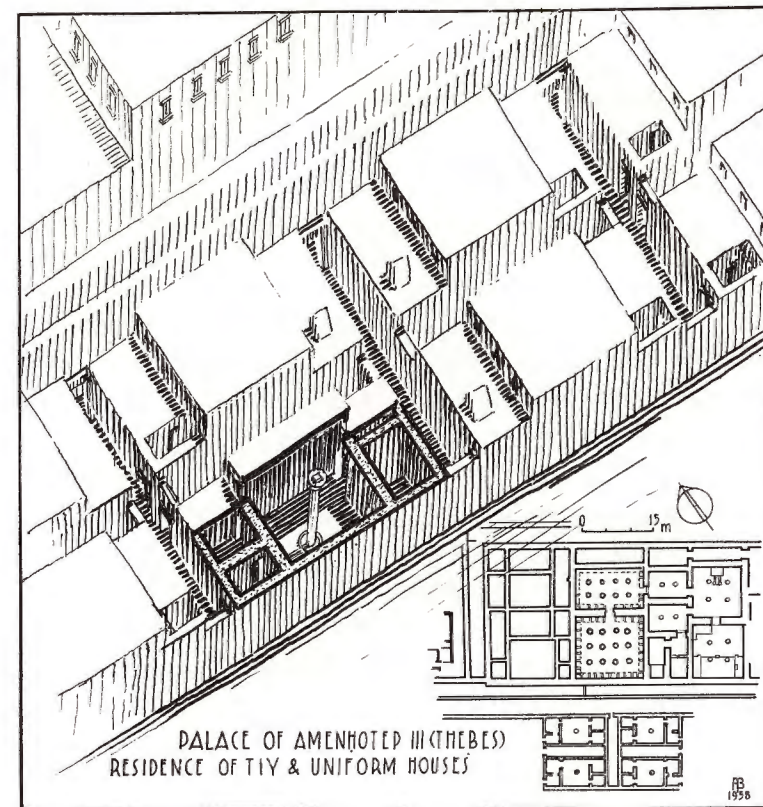


COLOR PLATE II. *Glazed ceramic tiles from the temple palace of Ramses III at Medinet Habu (see p. 24).* Three of the sixteen glazed tiles that formed the lowest border of the ornamental composition on the two entrance doorways to the temple palace (cf. p. 45, pl. 1). They were set on either doorjamb in groups of four facing the axis of the door. These three represent bound captives: (a) a Libyan tattooed, (b) a Negro, and (c) a Hittite clad in their exotic garb. In spite of their small size (25 cm. high) the figures and the features show all the typical characteristics of the races in accurate detailed modeling. Glazed tile had been used to line walls since the Third Dynasty, but it appears extensively in the New Kingdom temples and palaces, with a developed palette and technique of molding. It is even exemplified in the wall decoration of the villas at Amarna, and perhaps the floors of the palaces.



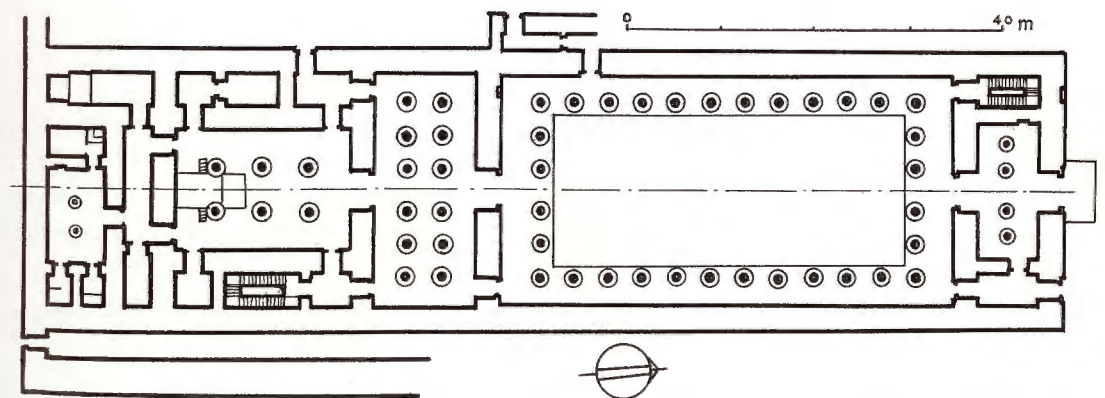
COLOR PLATE III. *Restored perspective of the hall of the harem in the palace of Amenhotep III at Malqata, 1400 B.C. (see p. 52 and fig. 26).* Enough evidence was retrieved by Tytus to allow for this restoration. The hall of the harem (fig. 26:4) was 30 meters long, nearly half the area of the main audience hall (fig. 26:1). Its wooden columns on limestone bases in two rows imitate the slender lotus stalks with capitals in the shape of stylized half-blown flowers each flanked by two buds. They seem to grow out of a blue pond with black ripples, lotus, fish, and ducks with a border of thickets of greenery and birds rabatted on its sides. A dado surmounted by scenes with large figures similar to those in the second audience hall (fig. 26:2) form the murals interrupted by the eight doorframes with vertical decorative molding leading on either side to the four suites of the harem ladies. Flanking the large doorway to the throne room of Amenhotep III at the rear (fig. 26:3) are two murals portraying the pharaoh seated in state on his throne as an illusionistic replica of the scene appearing through the door opening. The large vultures of Nekhebet fly with wings outstretched (5 m. span) over the nave brightly lit with the morning sun from the clerestory windows. Over the darker aisles an elaborate pattern of linked spirals and rosettes shows attractive hues of blue and red on yellow. The colors increase in intensity from the dull greenish blue of the pavement, to the vertical scheme of red and black of the dado and the large figures, reaching the most gorgeous palette in the ceiling vultures. It is planned to carry the eye upward. It has been noticed that the wavy lines and the general masses of the greenery were applied by the ordinary painters on the wet plaster of the pavement, and that details such as lotus, birds, and fish were added by the master painters after the plaster had dried. The walls and ceilings were covered with mud plaster to which a thin layer of whitewash was applied as a background to the paint. The style shows freedom in brushwork, especially in the naturalistic representation of plants around the more carefully detailed pond. A similar stylistic duality occurs some twenty years later in the palaces at 'Amarna, perhaps the work of the same school of painters.

COLOR PLATE IV. *Restored perspective of a street in the Empire period at Thebes (see p. 60).* The street is far from straight and not of a consistent width, narrow enough to afford cool shade most of the day. It is crossed by secondary lanes. Occasionally a few tamarisks growing in brick containers and palms mark with their dusty green a more sophisticated façade. Dust is kept down by sprinkling, as was done in the courts of public buildings. There is no water supply and toward dusk water is brought from the Nile in jugs carried on asses or by slender maidens. Shops are grouped according to trades in the secondary well-shaded streets in the vicinity. The houses that line this street running north-south resemble those that the grandees liked to have depicted on the walls of their tomb chapels in Western Thebes (see pp. 408-411). They are usually two-storied and accessible from a doorway painted red to which a small stairway of a few steps rises from the street. The brick walls are plastered white, lilac, or gray, enlivened above the level of the ground-floor windows with red lines running horizontally at regular intervals up to the terrace parapet. These lines imitate the joints of pinkish mortar in stone masonry. The windows of the ground floor are small, set high, just beneath the ceiling, with vertical gratings of wood. Contrasting with these are the large windows of the main first floor, the piano nobile, with their mullions shaped like papyriform colonnettes flanked in the lower part by traceried screens painted with brilliant colors, backed by their shutters. Most of the larger houses have basements, some of which are lit through low slots at street level. On the terrace an awning on columns or posts provides a welcome shaded working area in daytime and a sleeping alcove during the hot nights. Conical bins, posts carrying lines hung with meat and fish to dry in the sun, and the arched apertures of the ventilators appear behind the parapets of interlaced palm fronds. In the distance the Nile flows past the green banks and mirrors the morning sunrays playing on the golden sand. On the horizon gleam the many pylons and obelisks of Karnak.



28. Rows of suites on a uniform plan in the palace of Amenhotep III at Malqata: plan and restored axonometric projection.

29. Plan of the palace of Merneptah at Memphis.



The villas of the high officials, the quarters for artisans and administrative offices spread south around the four palaces into a large town. West of the town a graded road ran northeast to southwest, turning north to the mortuary temple of Amenhotep III marked by the so-called colossi of Memnon, and south toward cultivation in the vicinity of a small sun temple.

THE PALACE OF MERNEPTAH.⁵⁰ The building seems to have formed part of a large group of palaces. The plan is a long rectangle (N.-S.) and consists of a north transverse vestibule with four columns, leading into a deep court surrounded by a columned portico (fig. 29). The plan of the residential apartments is of the 'Amarna type: a front broad hall with two rows of six columns each, and a deep throne room with two rows of three columns and a dais for the throne between the last two columns. Doorways on each side of the throne room lead to rooms and to the staircase to the terrace. The third and rearmost part is accessible through doors on both sides of the throne: a transverse corridor, a typical feature of the 'Amarna palace, serves to connect the bedroom, characterized by a bed-alcove (S.W.), with the master's private apartment, consisting of a living room with two columns, a bathroom, and two lateral rooms.

The harem could have extended to the west of the buildings and have been connected with them through a lateral doorway.

A typical feature of the building is the richness of its decoration, both in materials and in style. Walls and pavements are stuccoed and painted with scenes above a dado of panels with symbolical plants of Upper and Lower Egypt (throne room). The dais of the throne is a rectangular platform entirely covered with low relief and brilliantly colored, representing panels with four figures of captives and four bows within a frame of symbolical patterns. It is approached from the front by a ramp and on the sides by two flights of steps. The throne room was lit through slot windows with vertical grating and openwork (6 x 8 ft. high [1.82 x 2.43 m.]), set high up in the walls. Colored low relief also covered doorjambs and lintels, sometimes enhanced with faïence inlays. The columns of the open papyriform type were similarly decorated in colored patterns with a broad band of gold on the lower course of the shaft.

A remarkable element is the balcony of appearance over the doorway between the entrance vestibule and the court, to which a staircase led, probably

built over the north aisle of the court portico. The columns of this aisle are smaller in diameter than those of the three other aisles of the portico. The bedroom to the west of the corridor of the private apartment is a long room with a stone-paved alcove accessible through a ramp. Both bathroom and latrine are paved with stone.

THE CITIES: PLANNING AND HOUSING

Our evidence about towns from excavation would have been somewhat frustrating were it not for the Eastern Village at 'Amarna which, though small, yielded well-preserved elements that permit postulating fairly approximate population figures and its coefficient of density of population. The data about other towns of the Empire are fragmentary but what does remain shows an interesting variety in the types of urban settlement:

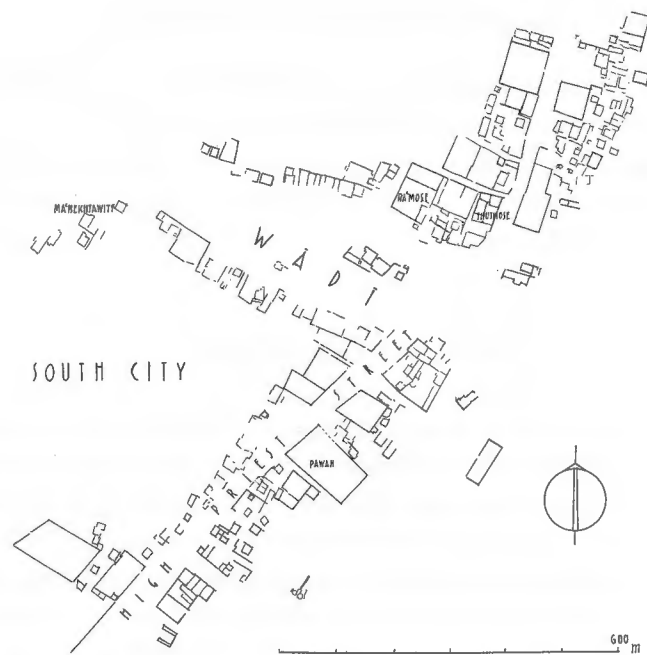
1. Preplanned settlements such as the independent towns for artisans ('Amarna East, see fig. 71; Abydos, see fig. 31), or settlements of prisoners around the temples (Medinet Habu, see fig. 42).

2. Attached houses of a semiuniform plan within a preplanned quarter for Egyptian officials in a fortified trade outpost in Nubia (Uronarti) or in the Sudan (Sesebi, see fig. 32).

3. Densely populated urban settlements with multistoried town houses on valuable land (Thebes). Because of the lack of pertinent data this category is probably the most frustrating, especially since it obviously included the most important centers. These cities on the Nile have probably completely disintegrated in cultivated land.

4. The city of Akhetaten built in the desert on the east bank of the Nile (see fig. 45), probably a unique experiment in Egyptian town planning, with its Central City grouping of official buildings (temples, palaces, administrative units) and its other quarters consisting of huge mansions on individual plots forming blocks arranged according to a loose scheme along the streets (fig. 30). The excavators have succeeded in restoring the plan of the town and its houses to the most minute detail.

5. Suburban areas dotted with large mansions of estate owners surrounded by gardens within prohibitively high enclosure walls, or by smaller country houses used only during the harvest season, fieldwork, or feasts. Here



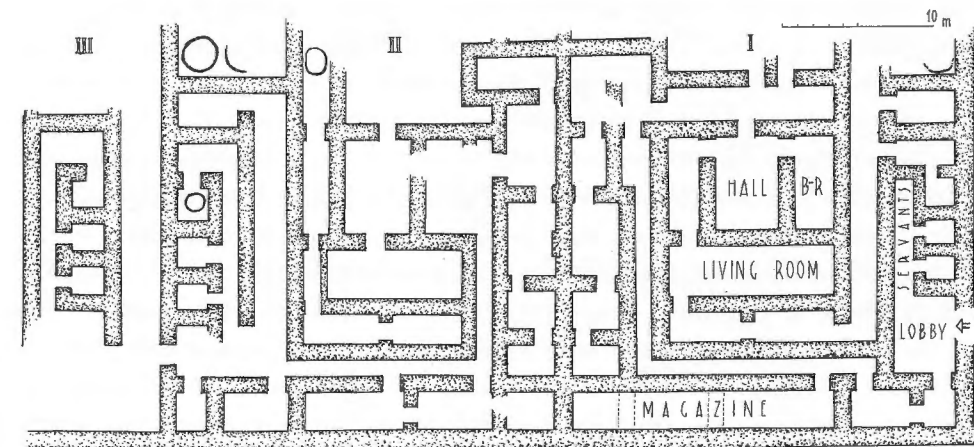
30. Plan of the eastern edge of South City at 'Amarna, giving an idea of the loose layout of the streets.

our only source of information is the graphic evidence derived from the murals representing houses which many of the Theban grandees liked to have on the walls of their rock tombs in Western Thebes (see figs. 1-13).

*Town of Ahmose (Abydos)*⁶¹

A town to house the staff employed in the building of the tomb complex of the pharaoh was erected according to a preplanned project; it was occupied for only ten years, however (1580-1570 B.C.). The plots are large squares (26.3 x 27 m. = 710 sq. m.) and the houses are contiguous on a uniform plan, one pair being laid out symmetrically about a party wall.

The plan of the mansion is unsymmetrical, with thick, well-built walls. It features long corridors and rooms, and is not easily defined. A division into three sections could perhaps be recognized: in the center are the reception rooms and the master's suites, the harem, the magazines, and dependencies. A shallow hall leads to the master's suite which forms the nucleus of the mansion



31. Contiguous mansions in the town of Ahmose at Abydos.

(fig. 31). The suite consists of a second central hall flanked by a bedroom and a corridor leading to a living room. Another long corridor opening from the living room leads to small dependencies. Connected with the shallow hall is a lobby with two doors, one of which leads to a series of four rooms, dependent from one another and which could have served for the harem, and the other leads via a long passage to magazines at the rear of the house and to the entrance vestibule and servant quarters on the street side.

The identification of these various parts can only be surmised on the grounds of their various characteristic features, after comparing them with the type of mansion at Lahun.

*The City of Sesebi (Sudan)*⁶²

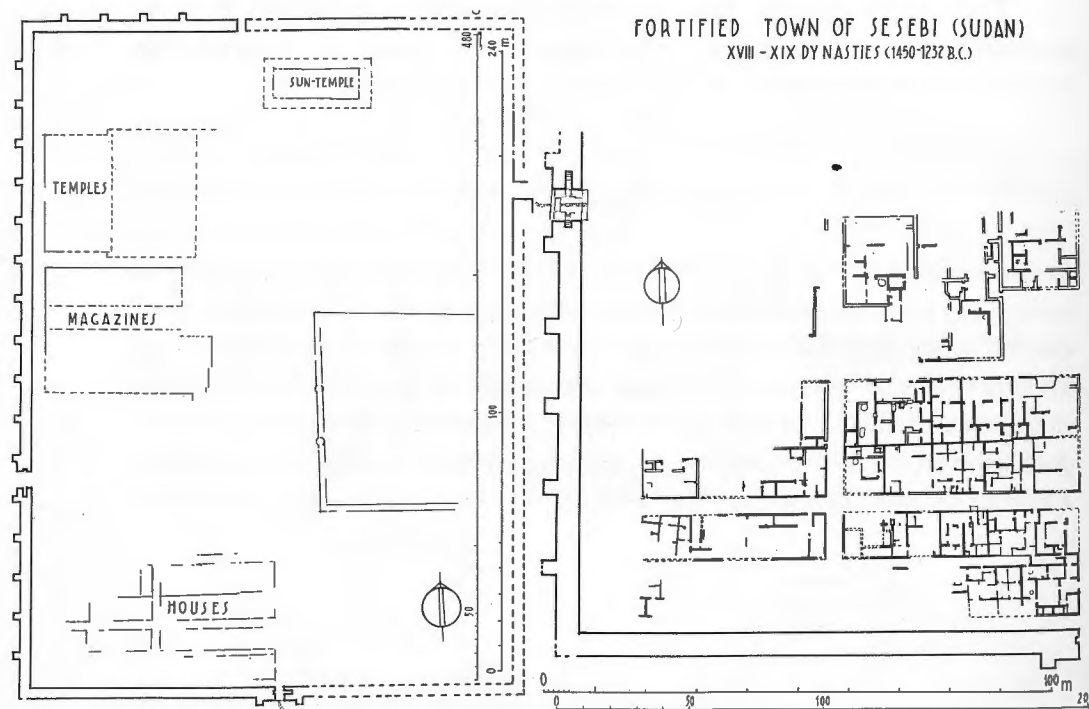
In the fortified city of Sesebi, between the Second and Third Cataracts (180 miles [269 km.] south of Wadi Halfa) there was, in the southwest corner, a quarter with small houses, and larger ones to the north. Temples and magazines of the usual type stand in the northwest area of the city. The chronology of the site seems to extend at least from Amenhotep II (1450-1425 B.C.), perhaps even from Thutmose III or Hatshepsut, until the Nineteenth Dynasty (Ramses II, 1301-1235 B.C.).

TOWN PLANNING. The layout of the residential district follows a regular orthogonal pattern of streets directed E.-W. meeting other ones running N.-S. It could have been divided into four square sections, each consisting of two rectangular blocks of houses along three or four E.-W. streets. A street runs as a pomerium along the inner face of the town wall for defense purposes, as in all Egyptian fortresses of the Middle Kingdom in Nubia. Houses are attached side to side and even back to back. Space seems to have been carefully saved (fig. 32). The southernmost block features two rows of houses attached side by side, all with their entrance doorway facing north. An alley runs in the middle of the block to afford access to the southern row, an arrangement quite similar to that at Olynthos (fifth century B.C.). The block to the north, although of the same width, has no alley. It seems that it was a rule to avoid having any entrance along the pomerium, which would have been exclusively reserved for the free circulation of the defenders in the event of an attack.

HOUSES. Two types of houses can be differentiated:

Type I. A small house which consists of a large hall with four or more inner rooms, or sometimes an anteroom, a hall or an inner living room, and rooms around it. The transverse walls in contiguous houses are often on the same alignment, a fact suggesting that some uniform plan was followed. There are kitchens but no bathrooms.

32. Plans of the fortified town of Sesebi in the Sudan.



Type II. The large houses set to the north are nearer to the 'Amarna type, though they have no yard. A northern lobby leads into a front hall which communicates with the living room (one column, a dais, and a brazier) and is flanked by two rooms on either side. To the south are the master's suite: a bathroom, a dressing room, and a bedroom, characterized by the alcove for the bed in the southwest corner. Upper stories were erected, with columns in some of the houses.

Most of the houses have cellars, intended probably to replace the granaries and cornbins which were usually erected in the courtyards. They are small, beehive-shaped structures with square apertures of dressed stone, or large irregular pits of later date. The walls are in brick, plastered with mud and whitewashed, the thresholds in stone, the floors of rammed earth, and the roofs of logs and beams covered with palm ribs and mud.

Thebes

The earliest bastioned girdle wall that surrounded the temples at Karnak under Thutmose III may also have extended south to enclose the city itself, called "The One in Front of Its Master" (*Khefet her nebes*),⁶³ written within the hieroglyphic sign of a bastioned wall. Thebes was named after Waset, the nome itself, but also, from the beginning of the Nineteenth Dynasty, after *Nwt*, "The City" par excellence, the No-Amoun of the Bible so described by the prophet Nahum (III:8-10) addressing Nineveh: "Art thou better than No-Amoun, which was set in the midst of the rivers, surrounded by waters?" This was interpreted as proof that the Nile flowed east of the town,⁶⁴ though it would be safer to assume that "the rivers" was a large canal. The city extended onto the site of the actual Luxor and onto the western bank, comprising the large complex of palaces of Amenhotep III and later the mortuary temple of Ramses III at Medinet Habu. It was the capital from the Eighteenth Dynasty (1580 B.C.) until Ramses II (1298 B.C.) who founded his residence at Pi-Ra'messe (modern Qantir) in the northeast Delta. The name Thebes given by the Greeks to the city may have derived from *Ipet Iswt*, the name of the temple of Amun-Re' at Karnak preceded by the feminine article *ta*.

The capital must have been a bustling city crowded with multistoried town houses such as that depicted by the scribe Thutnefer in the murals of his

tomb (see p. 15, fig. 1) along a few main arteries running parallel to the Nile crossing numerous subsidiary lanes (color plate IV). Karnak itself had its town for priests and craftsmen, for Thutmose III mentions a "town quarter" when he inspects the temples. The expensive cost of housing may even have induced some squatters from the poorest classes to settle within the precincts of the great temple of Amun-Re' at Karnak, from which they were evicted by the high priest Menkheperre', son of Pinedjem (Twenty-First Dynasty).⁶⁵ It can be surmised that the city extended south of Luxor and more sparsely north along the processional avenue 2 kilometers long lined with sphinxes and way stations which connected the temple of Luxor to those of Khonsu and Mut at Karnak, forming a long expanse much in the same way as at Akhetaten. Farther east two-storied country houses surrounded by their outbuildings such as that of the architect Ineny (see p. 21, fig. 6) dotted a suburban landscape.

The affluence of foreign goods brought in by trade and tribute to Amun-Re' "The Ruler of Thebes" and to the other gods "Lords of Thebes" made it the capital of the Empire and of the ancient world, as acknowledged by Nahum and Homer. To judge alone by the huge crowds of people in the service of Amun-Re' in his various temples as mentioned in the official records under Ramses III (Papyrus Harris I)—81,322 persons, 421,000 cattle, and 2,393 kilometers square of fields for Amun-Re'; 62,226 persons for the mortuary temple of Ramses III—the population of Thebes must have been very high indeed. Shops for every luxury craft must have lined whole streets, proliferating in special quarters. The pageantry displayed in the sacred processions of Amun of Luxor visiting his repository at Medinet Habu every ten days and especially those of Amun-Re' of Karnak visiting the ones at Luxor and Medinet Habu on the Beautiful Feast of the Valley must have attracted crowds of pilgrims. No wonder that the Ramesside Egyptians would praise: "Waset is the pattern for every city," that it would be chanted by Homer as "the hundred-gated Thebes" (*Iliad* IX.383) and exalted by later classical authors long after its destruction.

The Eastern Village at Amarna

Since both the capital of Amarna (see pp. 76-81) and its eastern village (see pp. 110-115) are described in detail later, I turn now to the significance of the

artisans' town in the eastern village for the comparative study of town planning and the evaluation of urban populations in ancient Egypt. As its geometric layout is completely cleared through excavation it ensures a factor of accuracy non-existent in other workmen's towns. Consequently it is safe to calculate from its data the probable population of the town and to derive a tentative coefficient of density of population. Borrowing the figure 4.18 which represents the average number of members for the rural family in modern Egypt, we find for the 75 houses in the eastern village (the larger mansion of the overseer in the southeast corner being counted as 2 housing units [see fig. 33]) a total population of 313. This would correspond to a coefficient of density of population of 15.65 square meters per person.

The coefficient of density of population can be used in the evaluation of the population of other workmen's towns. Assuming that the town "Senusert is Satisfied" (Hetep-Senusert) of Senusert II at Lahun was 370 meters square its population would have numbered 8,747 inhabitants. This figure is close to the ideal urban unit of 10,000 for new towns propounded by Pharaoh Wahkare' Khety III in his instruction to his son Merykare'.

*Deir el Medina "The Place of Truth"*⁶⁶

On the western bank of Thebes in a desert valley behind the modern Qurnet Mar'i a village named "The Place of Truth" for "The Servants in the Place of Truth" was started under Thutmose I (1530-1520 B.C.) to accommodate the workmen of the royal necropolis, quarrymen, draftsmen, sculptors, and painters. It was inhabited during four centuries and enlarged thrice during the Eighteenth, Nineteenth, and Twentieth dynasties.

The life of this small community is well known from the considerable number of ostraca found in the school of scribes in the town. The workmen were divided into two gangs, "right" and "left," each under a supervisor, his assistant, and a scribe of accounts. They worked in alternate shifts of 10 days, living in the mountain probably for safer control against thefts and the diffusion of information about the specifications of the royal tombs, such as their location. They were paid in kind in rations of emmer wheat and barley, besides being provisioned with daily food, water, clothing, oil for lamps, and tools. They built their own temples, one of which was dedicated to Amenho-

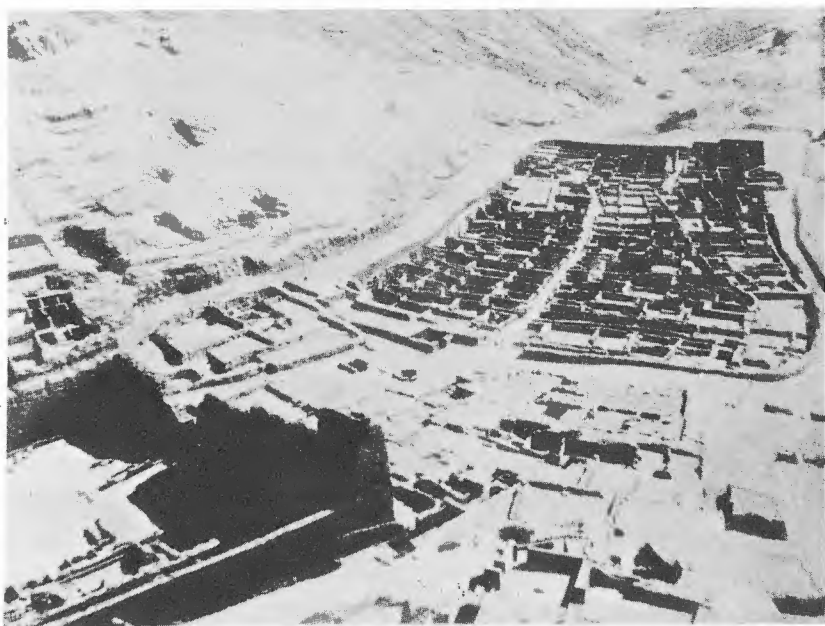


Plate 3. Views of the remains of the workmen's village at Deir el Medina, seen from the north.

Plate 4. View of the main street at Deir el Medina.

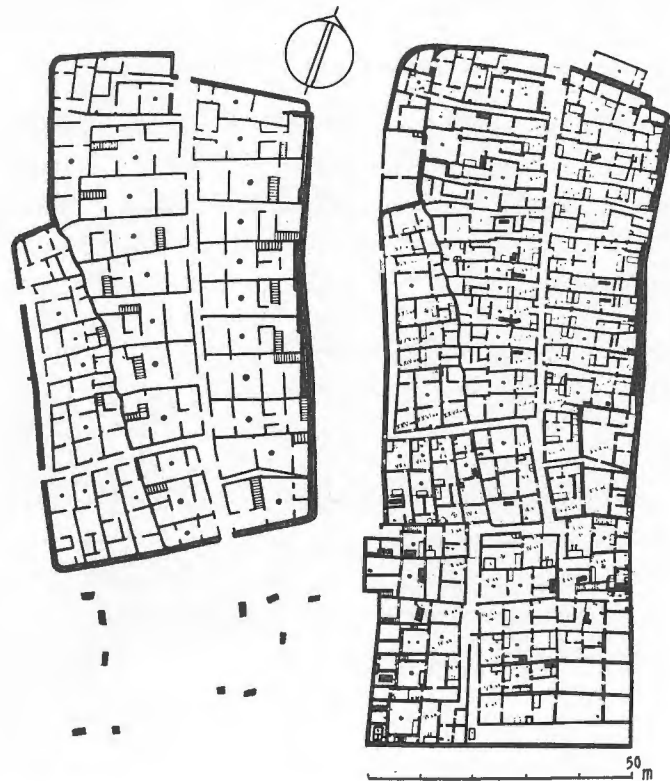


tep I who, with his mother Ahmose Nefertari, was their patron god. Small shrines with stelae dedicated to "The Peak," the natural pyramid south of Deir el Bahari, and to the serpent goddess Meryt Seger "The One Loving Silence" were built on the mountainside. They formed an aspect of the popular religion as practiced by such working communities.

TOWN PLANNING. The plan, although not so strictly regular as those of the workmen's towns at Lahun and 'Amarna, is nevertheless analogous to them in many respects. The first stage in the early Eighteenth Dynasty shows a series of 10 houses, on a contiguous uniform plan set on either side of a north-south central street. A stout wall on a trapezoidal plan surrounds the hamlet. Toward the end of the dynasty some 12 houses were added on the western side of the village and a few others to the north, and a street crossing the main one at its southern end served to connect this new quarter to the earlier one. The enclosure wall was extended to surround the newly built-up area (pl. 3).

In the latest stage, during the Nineteenth and Twentieth dynasties, the village expanded considerably to the south, numbering then no fewer than 70 houses within its enclosure (131.65 x 47.5-50 m.). The central street was not extended but bent at right angles before it resumed its southward direction (fig. 33). About 50 houses of a larger type for priests abutted on the outside of this enclosure on the northeast side. If we apply the coefficient of density of population as found for the eastern village at 'Amarna we obtain 412 inhabitants for the walled-in town, and *ca.* 250 more for the 50 houses of the priests, both figures being minimal, however, because the expected density should be higher than at 'Amarna since here there was no square nor were there as many streets as at the other.

No deliberate town-planning scheme was followed, but the simple device of a central street flanked on either side by a row of contiguous uniformly planned houses was employed. In spite of the long occupation of the village, the level of its streets and houses did not rise with layers of detritus, as happened in the Orient, ancient and modern (pl. 4). This fact seems to imply the existence of a regular cleaning process, either by some municipal authority or by the inhabitants. Police posts were established at the ends of the valley where the village was located and some votive chapels dedicated to popular cults were erected just to the north, parallel to the enclosure. The earliest tombs of the Eighteenth Dynasty which abutted on the enclosure were leveled

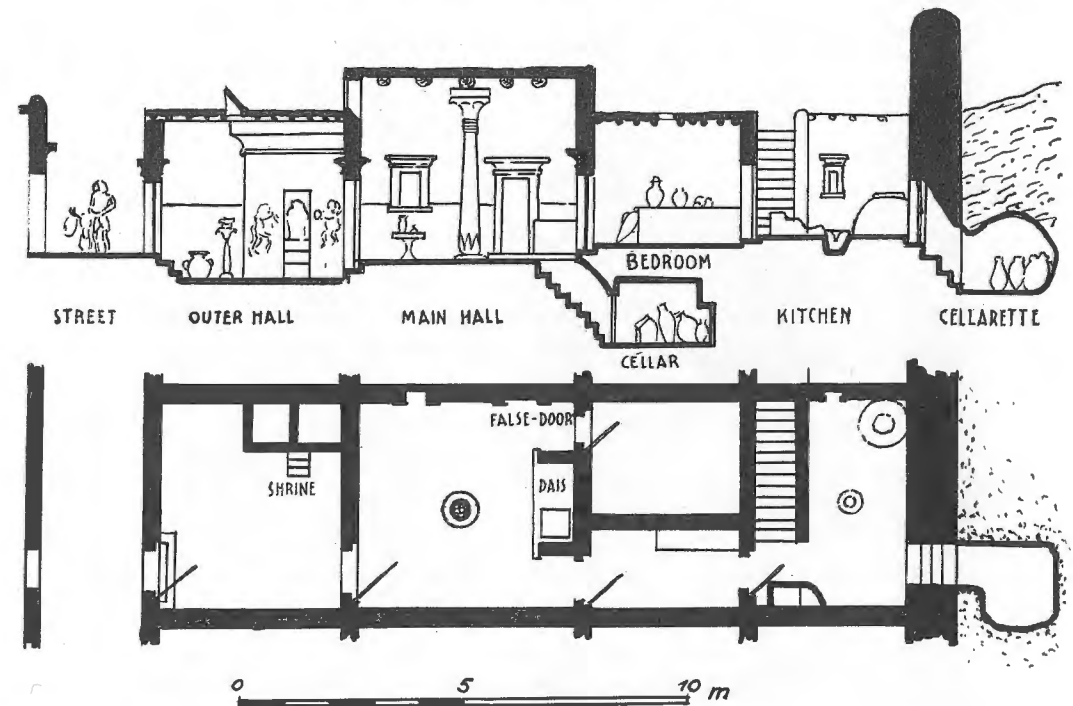


33. Plan of the second (*left*) and third stages of the workmen's city at Deir el Medina.

to make room for the expanding settlement, and a necropolis grew up on the cliff to the west of the village.

There was no water in the village and a special tank outside the main gate was filled and guarded to provide for a public supply of drinking water, another aspect of the existence of some municipal organization. Documents show that water carriers were kept on the public payroll. Women could fetch water from the public tank and store it in the large jars set at the entrance of their houses.

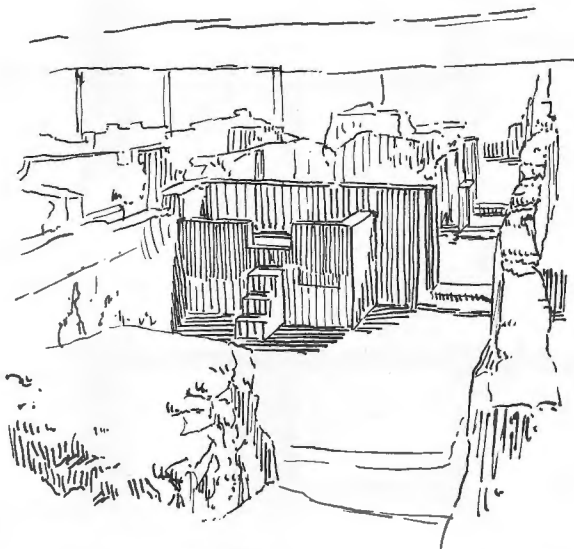
Houses. The plan of the house may have answered a special program, since the workman spent nine days and nights in the mountain and returned home only on the tenth day. The village population was accordingly mainly composed of women and children. The names of the inhabitants hint at Syrian, Cypriote, Nubian, and Hittite origins and it is a fair assumption that some kind of compulsory work was exacted by a public authority, either by the government or by the clergy of the necropolis.



34. Section and plan of a typical house at Deir el Medina.

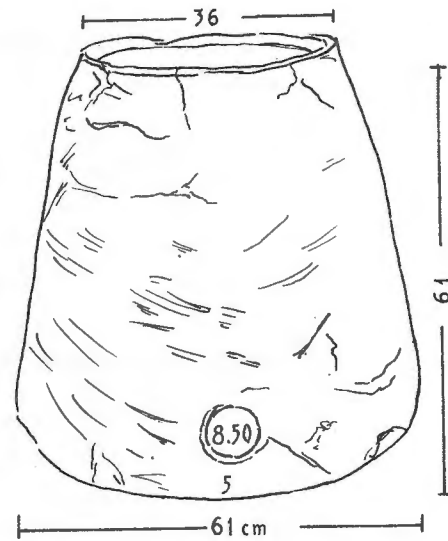
The housing unit is one story high, on a deep rectangular plan ($5 \times 15 = 75$ sq. m.), extremely efficient in its economy of space, without corridor (fig. 34). All rooms are set one beyond the other and communicate by doorways opening at one corner of the transverse walls. The plan of the house offers many aspects of similarity to that of the workmen's village at 'Amarna. The outer hall is slightly lower than the street level, is accessible from it, and is connected through a doorway in the opposite wall with the main hall. A brickwork platform ($1.7 \times 0.8 \times 0.75$ m. high) with three to five steps fronting its long side stands in a corner of the outer hall and is bordered by a low parapet or a screen wall reaching to the ceiling (fig. 35). This is a shrine to the popular dwarf Bes, the household genius and protector of women and love (fig. 36), or to the god Horus or the goddess Isis, who are sometimes painted on its outside. This recalls that an altar to the sun was also erected in the 'Amarna house.

In the main hall a central wooden column supports the ceiling and it contains a low dais (0.2 m. high), similar to that at 'Amarna, and a stela or

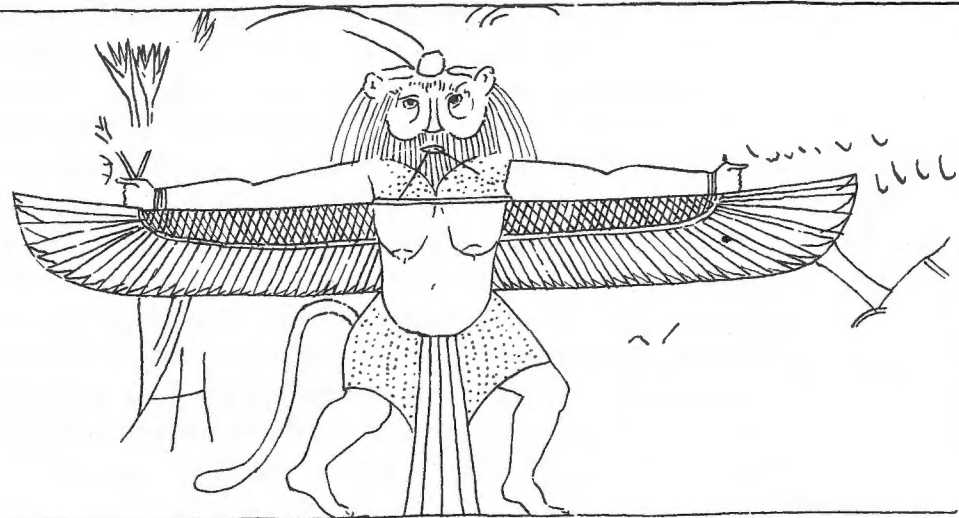


35. View of the remains of a house showing the altar in the vestibule.

36. Painted frieze from the altar representing the household genius Bes.



37. Typical clay oven from the Twentieth Dynasty.



false-door for the domestic cult, as at 'Amarna. The floor is higher than that of the outer hall and a trap door opens in it near the dais to disclose a stairway leading down to a cellar. As at 'Amarna, newborn children were occasionally buried under the floor of this main hall.

Two doorways open in the rear wall of this hall, one leading to the bedroom and the other, through a short passage, to the kitchen. Here the same built-in equipment as at 'Amarna is provided: a clay oven (0.8 m. diam., 0.75 m. high), a stone basin, a kneading vessel, a silo, and a staircase ascending to the terrace. Sometimes a few steps in the back wall lead down to a cellarette cut in the bedrock. It appears that the ceiling, if any, was in brushwood used as fuel for the oven. The typical oven in the Twentieth Dynasty features an inner truncated clay cylinder (61 cm. high, 61/36 cm. diam., 3-4 cm. thickness), open at the top and at the bottom and plastered with a thick layer of mud (fig. 37). A small stokehole (8.5 cm.) is provided near the bottom. Tradition kept this type practically unchanged, as we find it earlier at 'Amarna and Medinet Habu; and it is still used today in Upper Egyptian villages.⁶⁷

The structure was in brickwork, with ceilings of palm trunks and stalks. Rammed earth, perhaps whitewashed, formed the floor (see pl. 4). Windows with wooden or stone gratings opened high under the ceiling. The altar consisted of a brick caisson with a transverse screen wall enclosing a filling. The dais in the main hall was of brick bordered with limestone blocks and sometimes provided with elbow rests at the sides. The wooden column of the main hall was a palm trunk, plastered and painted, as at 'Amarna. Although the occupants were hard-working artisans, they nonetheless afforded enough time and dynamism to decorate the walls of their houses with paintings of good taste. Paintings on all the walls but mainly on those of the shrine represent the popular and benevolent deities Bes, Taurt, Isis, and Hathor in white line on a gray background. Panels also show a woman at her toilet, a man rowing a boat, or a nude and gracile dancing girl (fig. 38). A white-washed dado (0.9-1.3 m. high) bordered with a gray stripe runs along the lower part of the walls. Niches at floor level contained stelae, and others above the dado accommodated the oil lamps. The whole scheme of decoration is not the outcome of an official program but the personal achievement of an art-loving caste of highly skilled craftsmen.

An insight into the aesthetic feeling of the working classes is gained from these paintings. The rate of literacy was relatively high, and families can

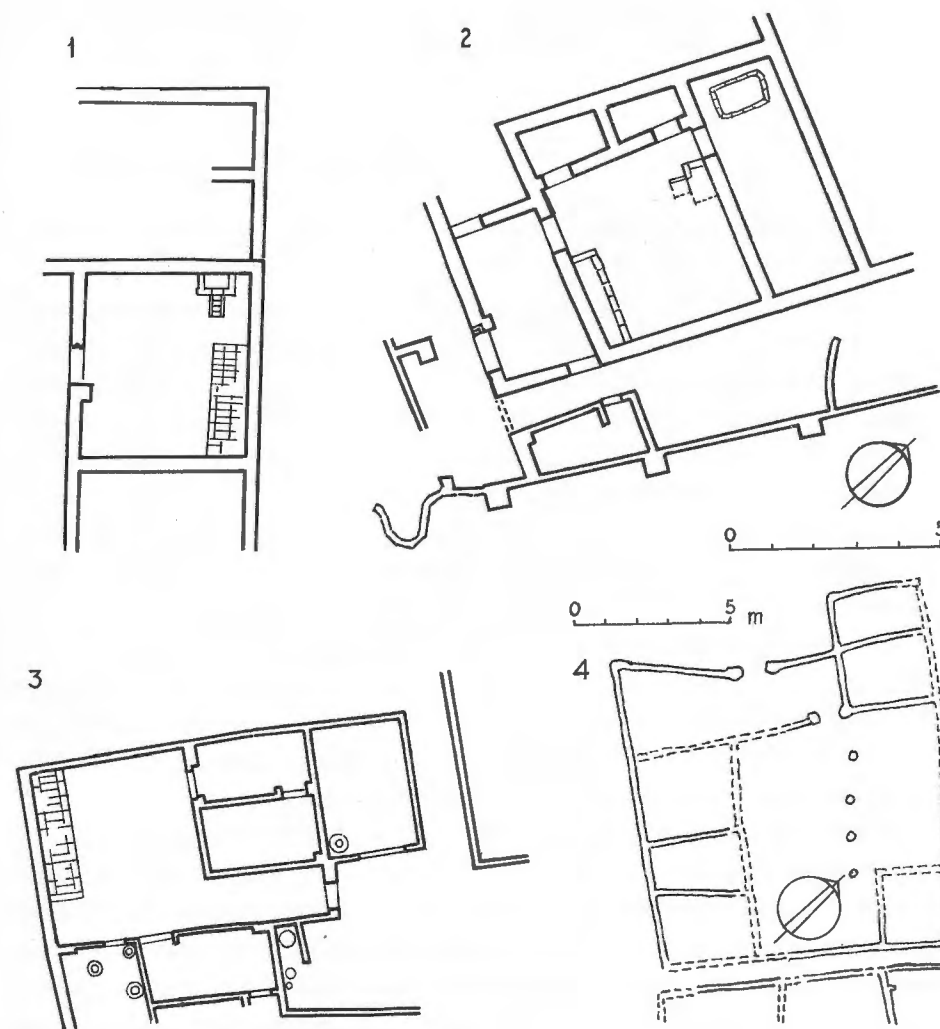


38. Fresco from Deir el Medina representing a dancing flute player.

be traced for many generations from the records. These workers are certainly worthy of praise, and the more so if we remember the rather precarious conditions under which they had to live. We are informed of this in a most spectacular way through a papyrus about a strike among the workers in the necropolis. The government had delayed the delivery of their payment in grain around 1170 B.C. The workmen sat day after day in the shade of the great temples of Western Thebes, shouting "we are hungry" through the heat of summer and the cold of winter.⁶⁸

*Medinet Habu (before Ay)*⁶⁹

Modest houses of the rural type, dating from the reign of Amenhotep III and later, were found beneath the temple of Ay. A thin enclosure wall (10-15 cm. thick), reinforced at intervals of 3-4 meters by pilasters, or on a sinusoidal plan, surrounds every house. The plan is of the same type as that of the workmen's village at Deir el Medina or at 'Amarna: a square living room (about 4 x 4 m.), with a massive brick bench and a small altar (less than 1 m. wide) to which ascend a few steps, sometimes abutted by two small rooms and a rear chamber (fig. 39:2), or by two groups of two rooms each (fig. 39:3).



39. Plans of three houses (1-3) and grooves in the bedrock for reed huts at Medinet Habu.

After the reign of Ramses III workmen erected houses of reed fences and partition walls fixed in grooves cut in the bedrock (10-25 cm. wide x 10-20 cm. deep) (fig. 39:4). The plan is rectangular and could be interpreted as featuring an entrance room and a yard surrounded by rooms. Some earlier houses (before Ay) were built of wooden poles set in holes cut in the bedrock.

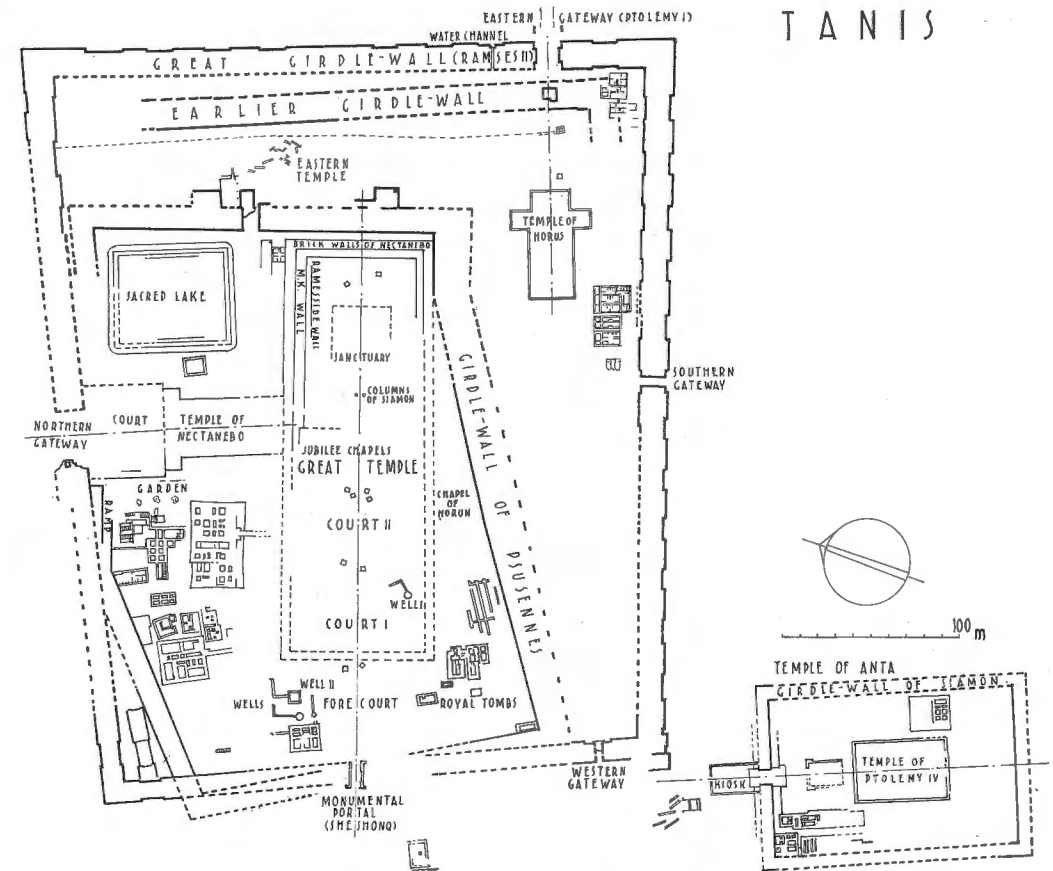
Both methods of construction were known since the Eneolithic times⁷⁰ and they represent immutable local techniques, still used today.

The Delta Residence Pi-Ra'messe

The site of the later city of Tanis⁷¹ seems to have assumed an importance even before the Fourth Dynasty. It had military and trade advantages, being located on the Tanitic Branch of the Nile at no great distance from the sea and well protected against Asiatic invasions by the Pelusiac Branch and by the stretches of marshy land. Cheops and Chephren built a granite temple of which nothing but dismantled elements remain, mixed with those of other buildings from the Old Kingdom and the Middle Kingdom.

After the Twelfth Dynasty this city, Avaris, became the nucleus of a tiny kingdom, with Seth as its chief deity accompanied by the Asiatic goddess Anta. It was natural that the Hyksos should establish their residence at Avaris. All the earlier elements were reused by Ramses II. The great builder seems to have fled from the excessive heat of the Theban summers as well as from the even more exacting priesthood of Amun and to have founded his residence at Pi-Ra'messe in the Delta, on the site of the earlier Avaris, later identified with the Tanis of the Bible and Greek historians. It should be remembered that the Nineteenth Dynasty actually originated from this Delta site.

From Pi-Ra'messe the great girdle wall as well as the girdle wall of Anta and the magazines to the north of the latter still remain. Toward the end of the reign of Ramses II this residence was called "The-Abode-of-Ramses-Beloved-of-Amun, the-Great-Ka-of-Re'Horakhty."⁷² The temenos of Pi-Ra'messe⁷³ was a large enclosure wall of brick on a nearly trapezoidal plan (ca. 300 x 400 m.). It is of the type featuring battered walls (17 m. thick), with projecting sections with concave beds alternating with recessed sections with convex beds of brickwork. This girdle wall was clearly planned in relation to the great temple, both having the same longitudinal axis E.-W. It seems to have had three gateways (fig. 40). The one in the north side opens in the middle of its length and was flanked by two colossi of Ramses II and two statues of lions with crossed forelegs. A doorway of secondary importance opens in the south side (400 m.) and its axis is perpendicular to the longitudinal axis of the Great Temple. The main gateway must have been the one in



40. General layout of Tanis.

the western side on the axis of the temple. It seems that it became ruined, for Sheshonq built another monumental portal about 10 meters east, using materials from Ramses' buildings and statues. Under all these gateways, foundation sacrifices had been celebrated, as is proved by the burials in earthenware jars, after the Semitic custom. A vaulted brick drain (0.9 x 0.65 m.) crossed the eastern wall.⁷⁴

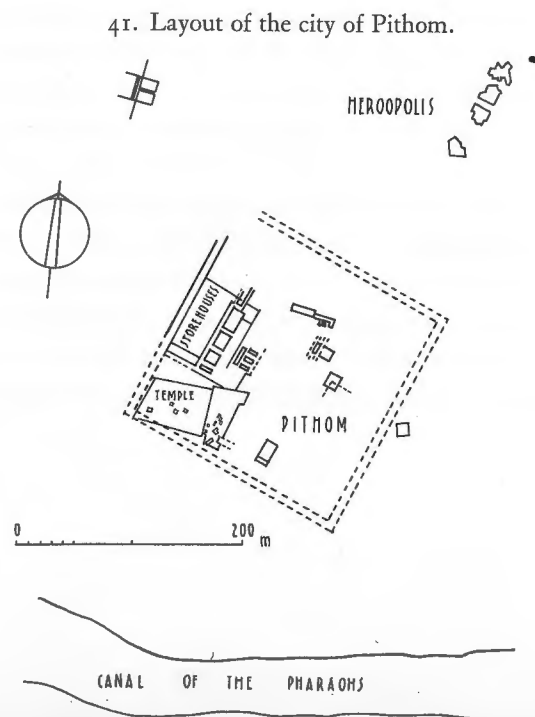
No exact data about the internal layout could be retrieved. The main building was the Great Temple which formed the nucleus of the plan, possibly connected at right angles with the northern temple as early as the reign of Ramses VI.⁷⁵ It seems even that the portico bordering the forecourt of the latter temple had been built by Ramses II.⁷⁶ Other temples were built around the Great Temple, such as the northern temple and a temple to Horus to the

south (?). On the evidence of the town plan from the Late Period one can surmise that ovens for ceramics and bronze-smelting were already in existence, to the northwest and to the north of the great temple, respectively. The excavations have not led to the location of the royal palace itself, but a sandstone block decorated with a representation in high relief of five prisoners similar to those found under the window of appearance at Medinet Habu proves the existence of a building with similar elements.⁷⁷ There was, undoubtedly, a large avenue leading from the western monumental portal to the temple, bordered by statues and colossi of Ramses II, a secondary one perpendicular to it from the south gateway, and a third one from the north gateway. It has been suggested that the plan of the Great Temple, with its lateral way of access from the north gateway through a porticoed forecourt, offered some similarity, under Ramses II, to the general layout of the temple of Amun at Karnak.⁷⁸

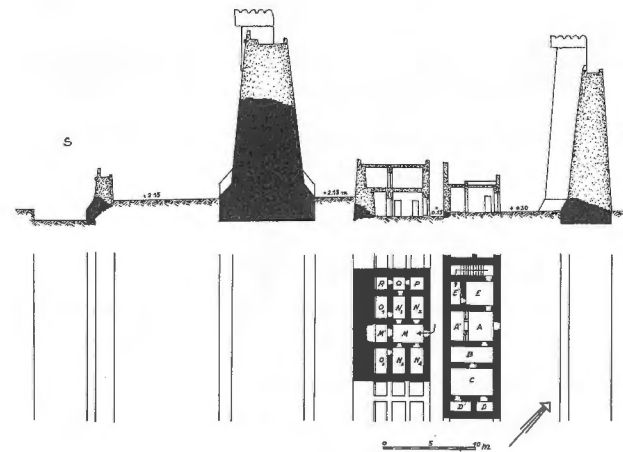
Outside the girdle wall, near its southwest corner, there extended a temple dedicated to Anta, surrounded by a rectangular wall with magazines annexed to it, all built by Ramses II.⁷⁹

*The City of Pithom "House-of-Atum" (Per-Atum)*⁸⁰

Ramses II founded Pithom to be the easternmost city on the southern route to Asia, marked by the Wadi Tumilat and an ancient canal issuing from the Tanitic Branch.



A brick wall on a square plan (210 m.), oriented by its corners, surrounds the built-up area (fig. 41). A temple is set in the western corner, perhaps of brickwork with inner limestone walls. It was dedicated to the god Tum, or Atum. To the north a large structure abutted against the northwest side of the city wall. On account of its row of deep rooms without doors or windows it was thought to be a storehouse, similar to those at Naukratis.⁸¹ This structure is of excellent brickwork. Beams seem to have been fixed inside the rooms (2



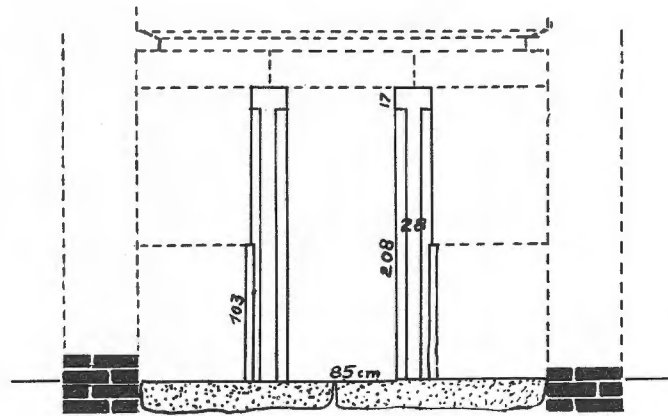
42. Plan and cross section of contiguous houses between the two enclosure walls at Medinet Habu.

yards [1.8 m.] high), and about 1 yard (0.9 m.) higher there was a recess in the wall, in all the rooms. Above this the wall was plastered.

*Houses Around the Temple at Medinet Habu*⁸²

Between the wall of the temple and the enclosure wall two rows of contiguous houses, uniformly planned on either side of a central alley, stretch N.W.-S.E. The thickness of the brick walls is so great that vaults seem to have formed the roof and they carried an upper story.

Each row is independent and contains houses of one type (fig. 42). In the row nearest the temple the plan of one unit is long and rectangular

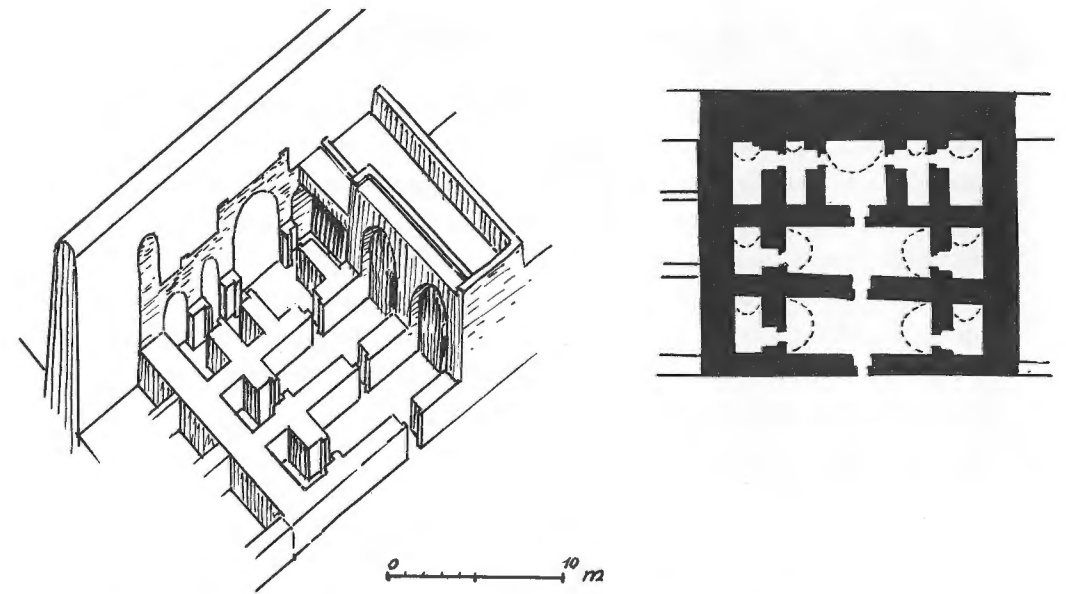


43. Detailed restored elevation of screen wall in one of the contiguous houses.

($16.5 \times 6.2 = 102.3$ sq. m.), consisting of rooms set side by side, flanking a central entrance court (A), with a porch (A') on two octagonal sandstone columns (2.25×0.28 m.), and with parapet walls (1.03 m. high) at the rear (fig. 43). The southern part of the plan is on the pattern of the 'Amarna type: a broad hall (B), a living room (C), and two small rooms (D, D'). To the north of the entrance court a large room (E) has a lateral storeroom and is connected to a staircase ascending to the roof.

The row that abuts against the enclosure wall has a compact plan of small rooms set along an inner alley (1.6 m.) running at the back of the inner row of houses. An entrance vestibule (M) with a rear room is flanked on the south side by two contiguous rooms (N_3, N_4), one of which has an internal side chamber (O_2), and on the north by a similar set of three rooms (N_1, N_2, O_1), itself having a rear set of three contiguous and communicating small chambers (P, Q, R). A staircase rises to the upper story. The roof seems to have been of vaults running in the direction of the row of houses, and with flat roofs in the upper stories.

No sanitary accommodation is apparent. The type of plan resembles that of the granaries and storerooms in the mansion at Lahun. Could these be barracks for soldiers or slaves? It is notable that Ramses III is said to have established thousands of prisoners of war and their families in the temple precincts (Papyrus Harris, I.IV, 5).



44. Plan and suggested restoration of the south administration building in the temple at Medinet Habu.

*Administration Buildings in the Temple at Medinet Habu*⁸³

A large building, symmetrical with the temple, has a square, strictly symmetrical plan (16×16 m. = 256 sq. m.), divided into three sections communicating with one another by a central doorway. The outer and middle sections are similar: a broad and shallow central hall with a room at both ends (fig. 44). The rear section consists of a central square room with two side rooms on either side. The roof was vaulted. This type of symmetrical plan was already known in the mansion of the Middle Kingdom at Lahun and still used in the palaces of the New Kingdom and adjoining houses of Ramses III at Medinet Habu.

THE 'AMARNA PERIOD

Although badly destroyed, the remains at 'Amarna allow of a successful restoration of the capital, its palaces, temples, and dwellings. This is possible because the plans can be traced from the foundation-trenches and the concrete beds left in the sand.

The earliest date encountered on any monument at 'Amarna is Year 6 of Akhenaten (1366 B.C.). No evidence of an earlier occupation of the site has been found, though Thutmose IV seems to have had some interest in the place.⁸⁴ Perhaps Horemheb (1314 B.C.) was the pharaoh responsible for the thorough destruction of the capital. He probably ordered a chapel of Amun to be erected on the site of the Great Temple as a final gesture symbolizing the uprooting of the Aten.⁸⁵ The Court had already been transferred to Thebes by Tut'ankhamun, the son-in-law of Akhenaten, so that the capital would have had a brief life of about 15 years (1366-1350 B.C.).

THE CAPITAL, AKHETATEN ('AMARNA)

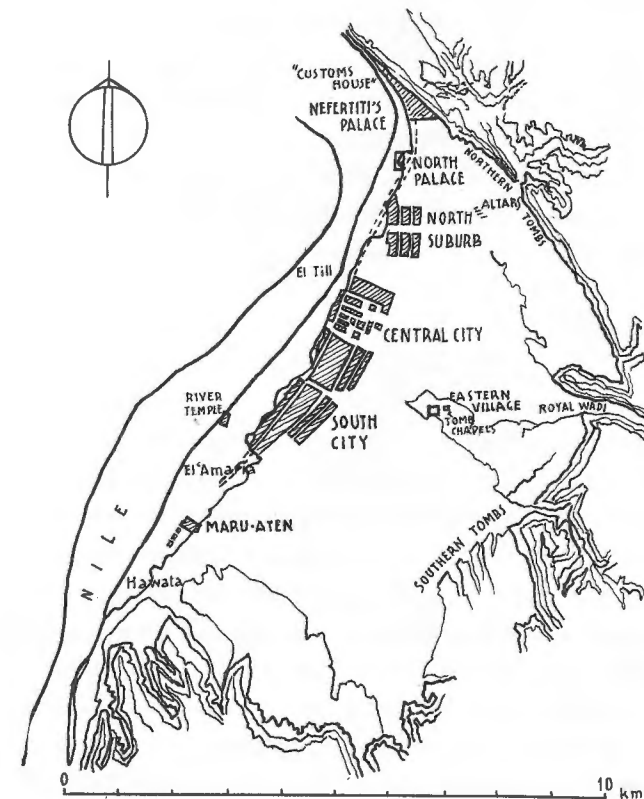
Akhenaten chose for his new capital⁸⁶ a site on both banks of the Nile in the Hermopolitan nome, about 300 miles (483 km.) north of Thebes, the modern Tell el 'Amarna. Fourteen stelae were carved with scenes of the pharaoh adoring the Aten or sun disk in the bedrock of the cliffs as boundary stones to the new sacred area, consisting of the capital proper and the fields on the western bank that were to provide food supplies. These stelae are still in situ at such places as Hawata, north and south groups of tombs Sheikh Said on the east bank, and at Tuna el Gebel, Dirwa, and Gilda on the west bank. The capital "Akhet-Aten," or "Luminous Mountain-Horizon-of-Aten," was located on the east bank on a highway along the Nile, the modern Sikket el Sultan, which probably had been in use for a long time before Akhenaten.⁸⁷ The site is to the south of Hermupolis, on the opposite riverbank. Some of the stelae mention the pharaoh's oath never to leave Akhetaten, probably to be interpreted in the sense of seeking another capital. The pharaoh also gives a vivid account of his selection and of the dedication of the site following the instructions of his father Aten when he illuminated a certain spot on the desert at sunrise.

The sacred site on the eastern bank is nearly rectangular in shape, enclosed within a cirque of mountains forming the inland limits of the desert plateau to the east and curving to the riverbank at both north and south ends.⁸⁸ The relative facility with which such a desert plain could have been closed at its north and south narrow entrances in the event of attack might have been one of the essential strategic advantages taken into consideration by

Akhenaten in the choice of the site. It accounts also for the absence of any girdle wall to the city. Tombs were cut in the cliffs to the north and south. Along the narrow strip of arable land grew the city, about 9 kilometers in length, but seldom more than 1 kilometer in width. This general growth parallel to the river stems from the difficulty of obtaining a water supply except in the vicinity of the Nile. Though it is a characteristic of all cities in ancient Egypt, it is more strongly felt in a desert stretch such as 'Amarna.

There is no town planning project, but merely a certain framework inside which the city grew.⁸⁹ This is mainly formed by three streets running N.-S. parallel to the river and meeting secondary transverse streets, occasionally at right angles (fig. 45). The excavators named the three main streets Royal Road (nearest to the Nile), West Road (known as High Priest Road in its southern stretch), and East Road. Two shallow depressions or valleys

45. Map of 'Amarna.



(Arabic *wadi*) running E.-W. divide the city transversely into three parts: the South City, the Central City, and the North Suburb. Each has its own individuality and consists of buildings belonging to a certain class. One could even speak of "zoning."

Except for the Central City no town planning rules were followed. It seems that the most important people settled first on large plots along the main streets, and were followed by others of more modest means who built near them, while the poorer ones squeezed their houses into the remaining areas. Streets are not paved but consist of a stretch of desert ground cleared from pebbles and sand. The cheap desert land allowed for an expansion quite different from the congestion of Thebes and the other large towns in the valley. (In these valley sites, where every new building had to encroach upon valuable cultivated land, the emphasis was on vertical development, and even granaries were set on the terraces). Akhetaten is also unique because its buildings were not altered during the short time of occupation.

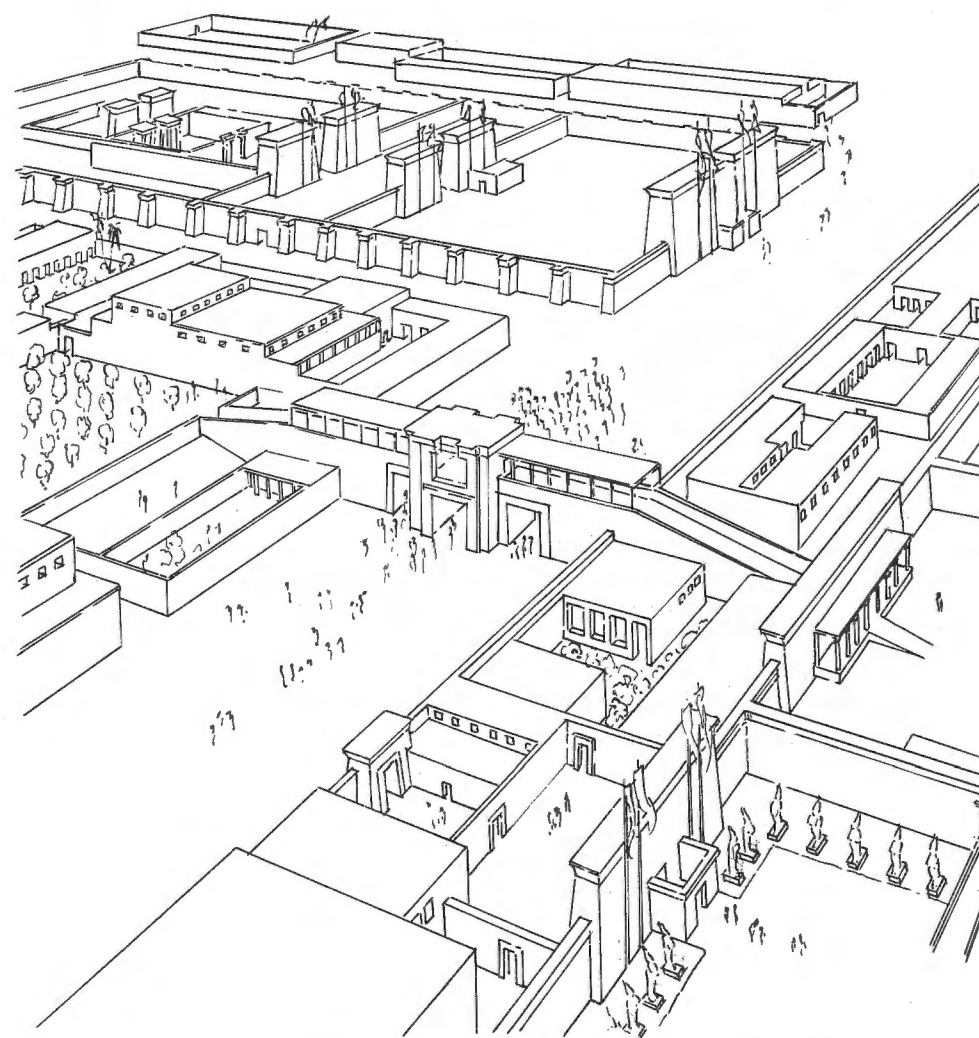
In a forlorn valley to the east, quite hidden from the city, lies the workmen's village, built on an orthogonal pattern within a square enclosure.

There is no provision for drainage, and bathrooms drained into the subsoil outside the houses. Drinking water was fetched from the river or from wells sunk to the subsoil water strata. Rubbish was burned outside the built-up area. Police headquarters were located behind the public buildings in the Central City and there were guardhouses along the desert tracks about the site.⁹⁰

THE SOUTH CITY.⁹¹ This is the part of the city to be built just after the Central City was laid out. It was occupied by the most important people. The vizier Nakht had his immense mansion near the cultivation. The high priest Panehsy, the priest Pawah, General Ra'mose, the architect Ma'nekhtawitf, the sculptor Thutmose, and others, as well as more modest people such as the sculptors, built in this quarter. It seems that the wealthy officials who laid out their villas at the very beginning did not occupy the whole area they intended to, and this was subsequently turned over to the smaller settlers. The streets are accordingly by no means straight (see fig. 30).

Probably connected to this quarter was a river temple, still in use under Ramses III and even later (Twenty-Sixth Dynasty).

Far to the south was the precinct of the "Maru-Aten," probably a temple dedicated to the Aten as the Creator.



46. Restored perspective of the main part of Central City at 'Amarna.

THE CENTRAL CITY.⁹² This seems to have been carefully laid out as a complete unit, "The Island," and consists of palaces, temples, government offices, and magazines. To the south is a glass manufactory (fig. 46).

The chronology of the buildings can be fairly well determined. The Chapel in the Great Temple and the royal estate were built first, followed closely, between Year 6 and Year 9, by the temenos wall of the Great Temple and its sanctuary, replacing the earlier chapel, while the palace was begun but

never completed. About Year 15 the large pillared hall, identified as a coronation hall for the ceremony of the crowning of Smenkhkare' as co-regent of Akhenaten, was begun. This quarter was deserted in the third year of Tut'ankh-aten; doors of houses and official buildings were blocked up and archives were left in the records office, which seems to have implied a certain optimism regarding the future of the "Horizon-of-the-Aten" (pl. 5).

The main artery is the Royal Road, so-called after the modern Arabic name Sikket el Sultan (Road of the Monarch). It comes from the Maru-Aten, south, passes through the old South City, and proceeds to the Central City, between the official palace and the royal estate, where it is spanned by a bridge and broadens into a square in front of the entrance façade of the Great Temple. The huge enclosure (800 x 250 yards [731 x 229 m.]) of the Temple forms the north boundary of the Central City. The royal estate consists of the royal house and a temple with magazines.

To the east of the royal estate runs the West Road, continuing the High Priest Street of the South City, passing by the Records Office and stopping at the temple magazines. Two transverse streets running E.-W. meet this West Road. The southern one stretches between the king's house and its temple, the records office and the clerks' houses to the south, and reaches the army headquarters. The second street passes to the north of the royal estate along the southern side of the magazines.

THE NORTH SUBURB.⁹³ Two E.-W. depressions divide the North Suburb, the south one separating it from the Central City. The North Suburb was inhabited by the middle class and had business areas and slums. It was not begun until the middle of the reign and was in the course of construction when it was suddenly abandoned by the original inhabitants. A picture of the haste with which the city was left is given by various buildings lacking minor elements to be completed, such as the enclosure walls with gateways in the eastern quarter, north of the depression, and even a house complete except for the lintel above the entrance doorway. It seems that people who could not afford to travel back to Thebes settled in the houses after these had been finally left by the guards appointed by the owners to keep them and after the valuable wooden elements such as doors and columns had been sent to Thebes.

The large estates bordering the two arteries, West Road and East Road,

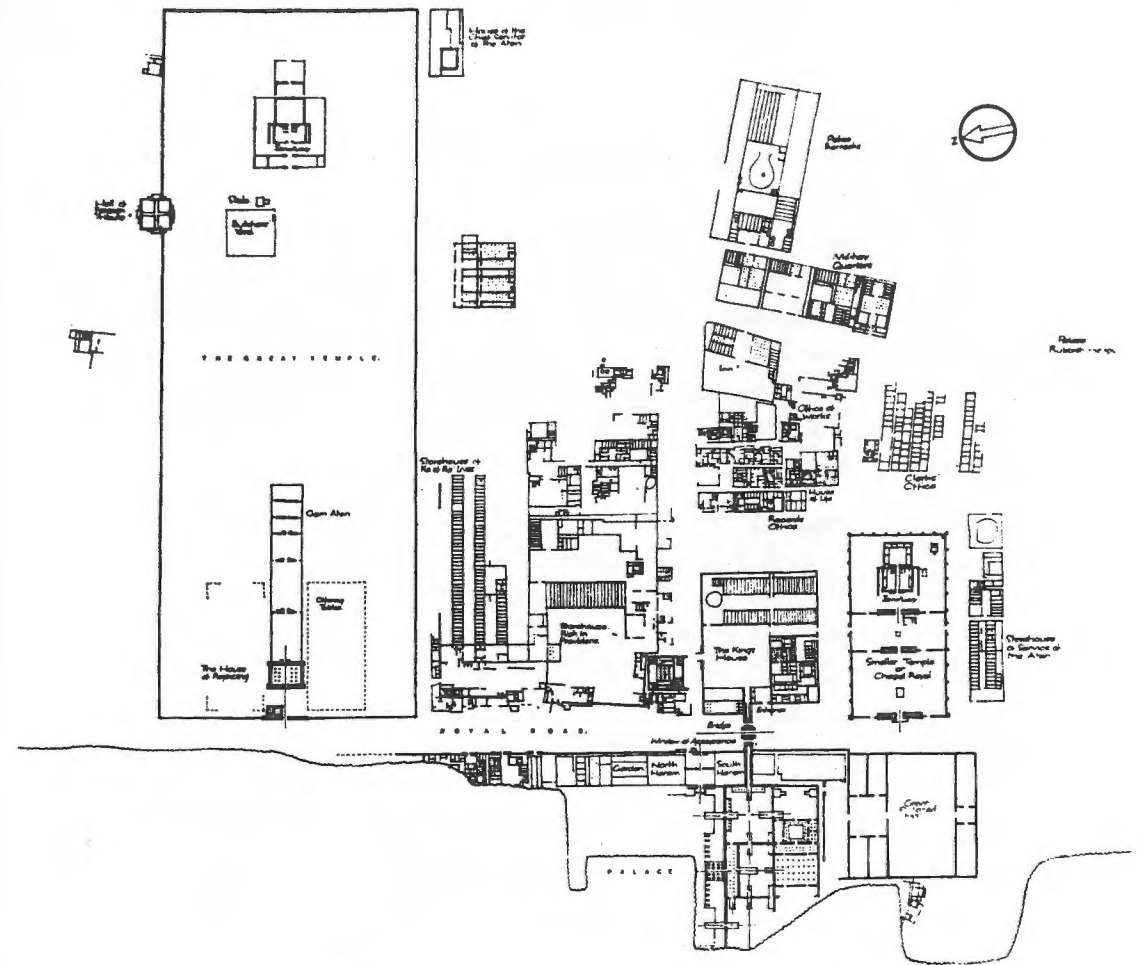


Plate 5. Layout of Central City at 'Amarna.

were built first, and subsequently middle-class houses and slums (two areas) intruded in between or encroached upon the streets, even blocking them.

To the south of the depression and along the Royal Road lies the North Palace. Farther north is the palace of Queen Nefertiti, where she possibly retired after leaving her husband. The large houses that form the North City probably date from the last half of the reign. The large terraced building at the mouth of the area could have been a customs house or a guardpost.

THE PALACES

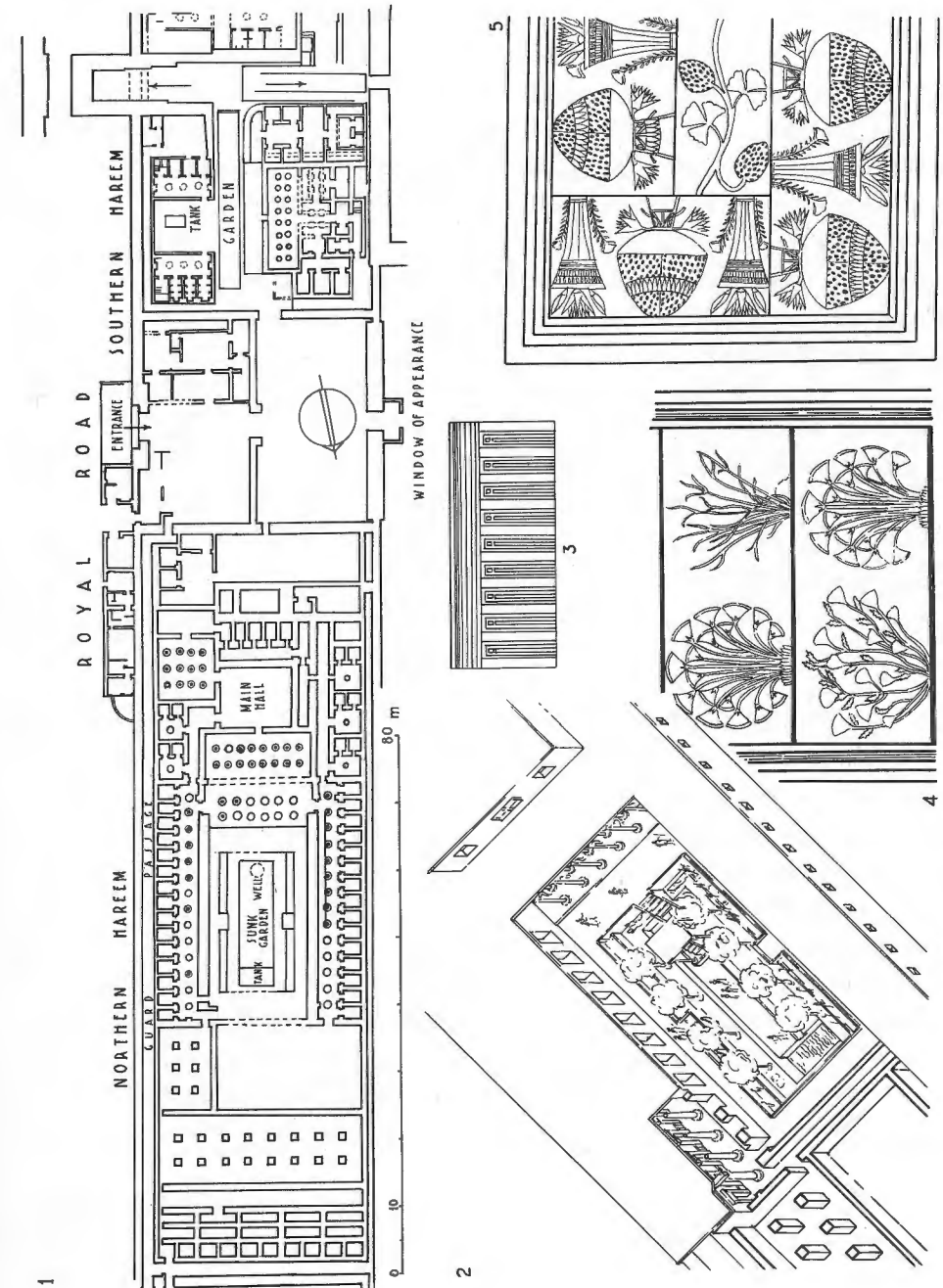
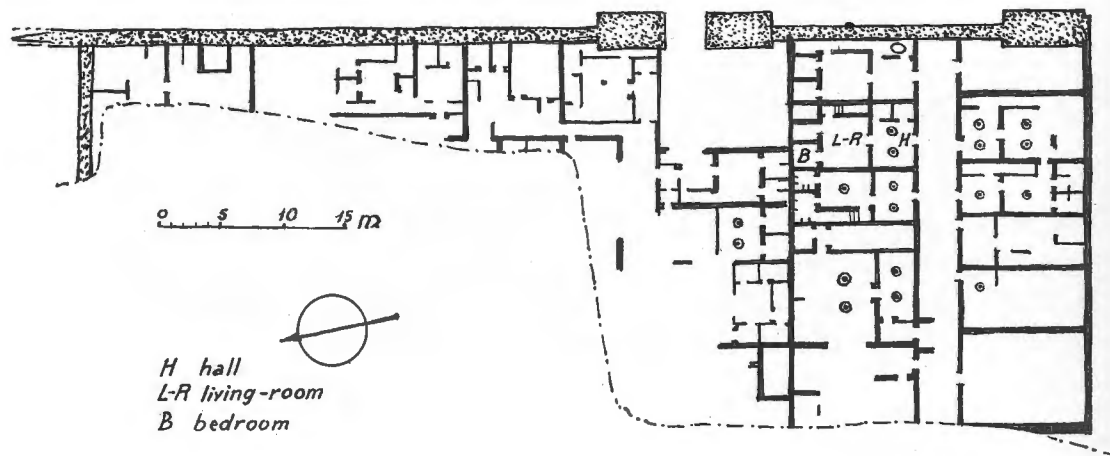
*The Official Palace*⁹⁴

This formal residence of Akhenaten lies between the Royal Road and the cultivation along the river, and was probably called "House-of-Rejoicing-of-the-Aten." The plan is directed N.-S. and consists of the state apartments built in stone and bordered along the eastern side by the servants' quarters (north), the harem (middle), and the magazines (south), all in brickwork. A bridge of three spans crossed over the Royal Road from the king's house on the east to the state apartments, passing between the harem and the magazines.

THE SERVANTS' QUARTERS (*fig. 47*). Three pylons with central doorways lead to the three groups forming these quarters, the northernmost of which consists of houses, while the two others are magazines. The typical house is of the uniformly planned contiguous pattern, similar but somewhat better than the house in the workmen's village.⁹⁵ The plan is rectangular, divided into three elements: an entrance hall with two columns, a stone lustration slab, and a brickwork dais; a central hall with one or two columns on a stone base; and two rooms with shelves at the back. All houses had a staircase to a loggia with a column on the terrace, and brick floors, sometimes with white plaster.

THE HAREM (*fig. 48*). The harem buildings stretch between the eastern side of the state apartments and the Royal Road. An entrance from the road leads into

47. Plan of the servants' houses in the Great Palace at 'Amarna.



48. Harem quarters in the Great Palace at 'Amarna: 1, plan; 2, isometric view of the north Harem, restored; 3, wall decoration; 4-5, pavement decoration in painting on plaster.

two courts, the inner one seemingly provided with a window of appearance, and divides the buildings into two groups, that to the north being the more important. An ambulatory surrounds the northern block, probably as a passage for guards—a disposition similar to the ambulatory of the palace of Ramses III at Medinet Habu. No direct entry to the inner rooms was provided from the road or even from the main entrance.

The plan is not entirely symmetrical. Along the N.-S. axis of the northern group are the following elements.

1. A sunken garden with a tank at its northern end, bordered on either long side by a narrow hall with a central colonnade and a row of small adjacent rooms (magazines?).

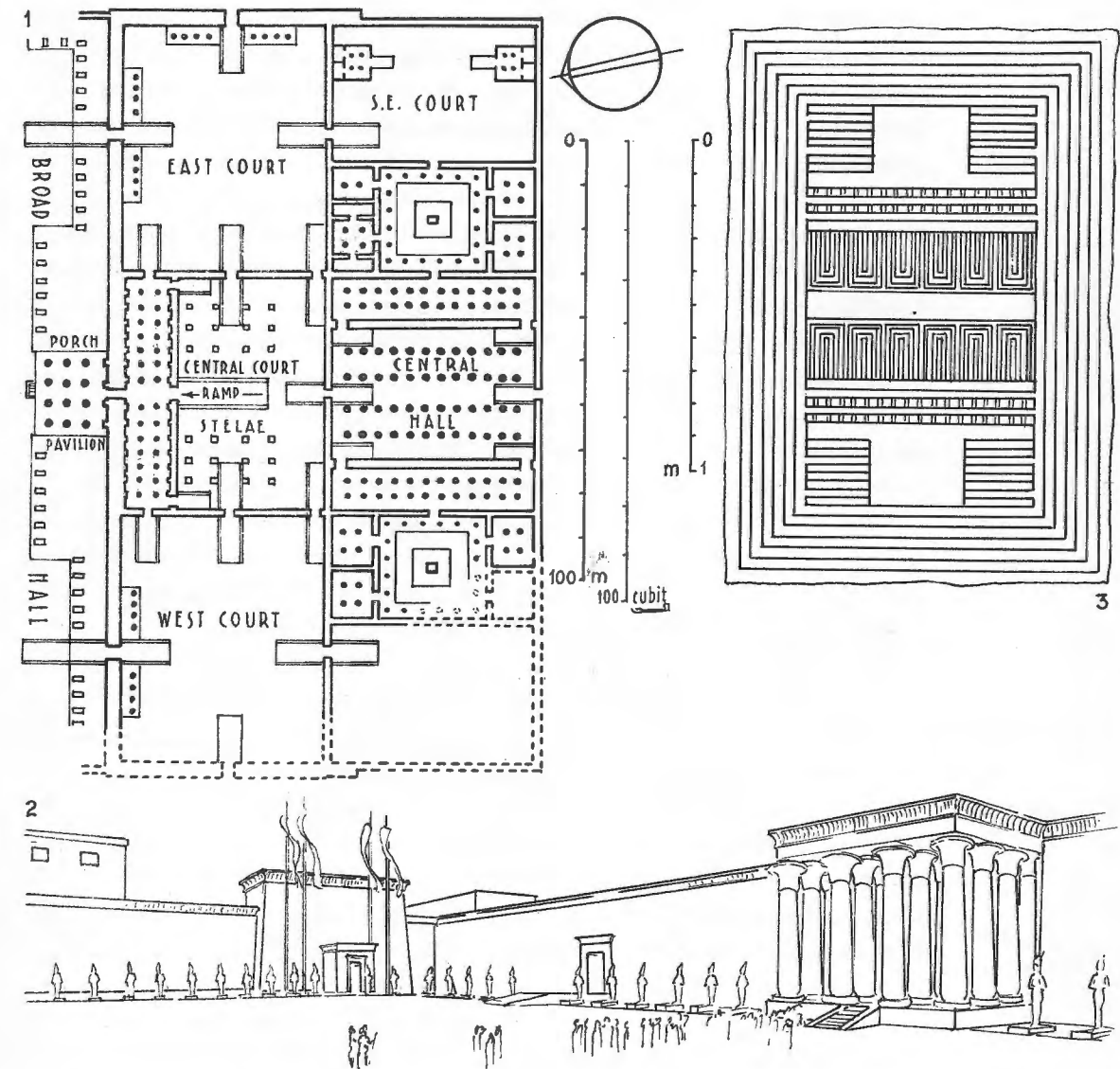
2. At the south end of the garden a columned portico stretches along the front of a broad hall which has two rows of columns. On the main axis down the gangway the painted pavement depicts a row of Asiatic and African prisoners flanked by two pools with fish and flowers (color plate V).

3. The main hall is square in plan and communicates to the southeast with a large room having twelve columns inlaid with faïence. The treatment of the pavement with motifs of captives and birds in the marshes, similar to the ones in the broad hall, is found in both the main hall and the columned room. Adjacent units on a uniform plan, three to the west and two to the east, flank the main hall. Each consists of a square room with a central column and two small adjacent rooms to the south. These units probably were the suites for the ladies of the harem. In the palace of Amenhotep III at Malqata similar larger units flank the hall of the harem, and in the second palace of Ramses III at Medinet Habu three dwellings on a uniform plan provide accommodation for three concubines. Two such rooms are represented in the tomb of Ay together with the ambulatory surrounding them.

The southern group of harem buildings, entered from the north, consists of a long garden flanked on one side by a court with two symmetrical suites featuring a hall and four rear chambers each, and on the other by an ensemble similar to that forming the northern harem. A broad hall leads axially to a square hall communicating with a columned room. All pavements are painted.

THE STATE APARTMENTS (*fig. 49*). The layout of this huge complex is strictly symmetrical about a N.-S. axis, parallel to the Royal Road. It is the only palace built in stone.

An extensive north court fronts the buildings (*fig. 49:1*, left edge): it was called "broad hall" and it was bordered by statues in quartzite and granite of



49. The Great Palace at 'Amarna: 1, plan; 2, restored perspective of the Broad Hall; 3, painted pavement in the Broad Hall.

the pharaoh and in quartzite of the queen, representing standing figures on the south side and sitting ones along the two wings (fig. 49:2). It seems that the original project of a gigantic columned south portico, over 150 meters in length, was never carried out. On the west are remains of a mysterious stone building. In the center of the south side an imposing porch on three rows of four columns each (sandstone, palmiform) shades the entrance to a transverse columned hall with two rows of fourteen columns each, communicating with the central court of the same breadth and with two side courts. The columns of the transverse hall are characterized by the representation of swags of ducks hanging on the shafts and free foliage on the capitals. The paving was of alabaster. This group of three courts is laid out axially with the bridge leading to the king's house. Each entrance to the court has a system of ascending and descending ramps bordered by granite balustrades intended to allow for the circulation of horse chariots, a curious feature indicating perhaps a Mesopotamian influence. A portico was erected in two wings flanking each of the entrances from the side courts to the broad hall or to the bridge (from east court). There seems to have been two series of three rows of four alabaster stelae each, engraved on both sides with scenes of the royal family worshipping the sun disk, flanking the central axis in the central court.

The next transverse group of elements in the plan consists of a central hall, of the same breadth and depth as the central court, flanked by two ensembles, each consisting of a square court surrounded by a colonnaded portico and flanked to the south by two adjacent square columned rooms, and to the north by two columned rooms, one of which has subsidiary chambers (?). The center of each square court is sunk and a central concrete platform might have carried a statue. The limestone columns of the central hall, in four rows of twelve each, had shafts in the shape of bundles of reeds and inverted bell capitals, reminiscent of the "tent-pole" columns in the Festival Hall of Thutmose III at Karnak. The flanking colonnades were of smaller size, which allowed for clerestory lighting in the central hall. The main feature of the side courts was a pair of pavilions, of which, however, only one was ever built.

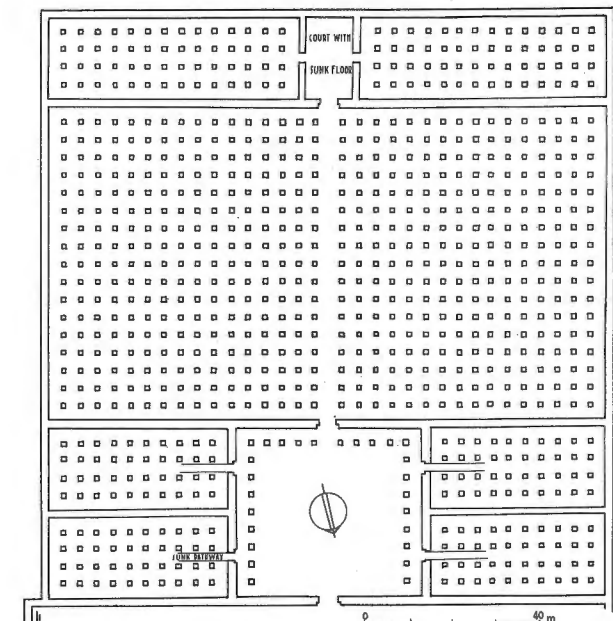
Ramps led up to the south side of the central hall, probably to some part of the plan which was never completed.

THE BRIDGE. The series of courts forming the first section of the plan is connected with the king's house by a bridge running along the central trans-

verse axis (E.-W.) of the state apartments and spanning the Royal Road (see fig. 46). This was a very solid structure in brickwork reinforced with large balks of cedar. There were three unequal spans (3.5 m. for the sides and 5 m. for the center), probably covered by flat roofs. Rooms decorated with paintings were built over the bridge. It has been surmised that a window of appearance opened above the central span of the bridge, since all the representations of the palace in the tombs at 'Amarna feature such a window as its main element. The design of the bridge would be similar to that of the gateway of the North Suburb. It will be found that a window of appearance later formed the principal element in the middle of the front façade of every temple palace at Thebes (Ramesseum, both palaces of Ramses III at Medinet Habu). It is noteworthy that in Assyria the temple was often connected directly to a royal building by a bridge. Thus the ziqurrat in the temple of Assur (Tukulti-Ninurta I, 1250-1210 B.C.) was reached from the gatehouse by a bridge, and later at Khorsabad the palace of Sargon II was made accessible from the neighboring temple of Nabu by a stone viaduct.⁹⁸

THE CORONATION HALL (fig. 50). This later addition to the palace is not set in the axis of the official palace, but is to the southeast and is connected to the entrance from the bridge. The plan is square and is characterized by a multi-

50. Plan of the Coronation Hall in the Great Palace at 'Amarna.



tude of piers covering the whole area, an arrangement strikingly similar to that of the later Persian apadana (throne hall of Xerxes at Persepolis, 518 B.C.). The square is divided into three transverse elements. A court surrounded on three sides by a portico on pillars is flanked on either east and west side by two deep halls with pillars. A roll decorates every vertical edge of the pillar. A sunken pathway bordered by a yellow brick curb runs down the central aisle of both eastern halls.

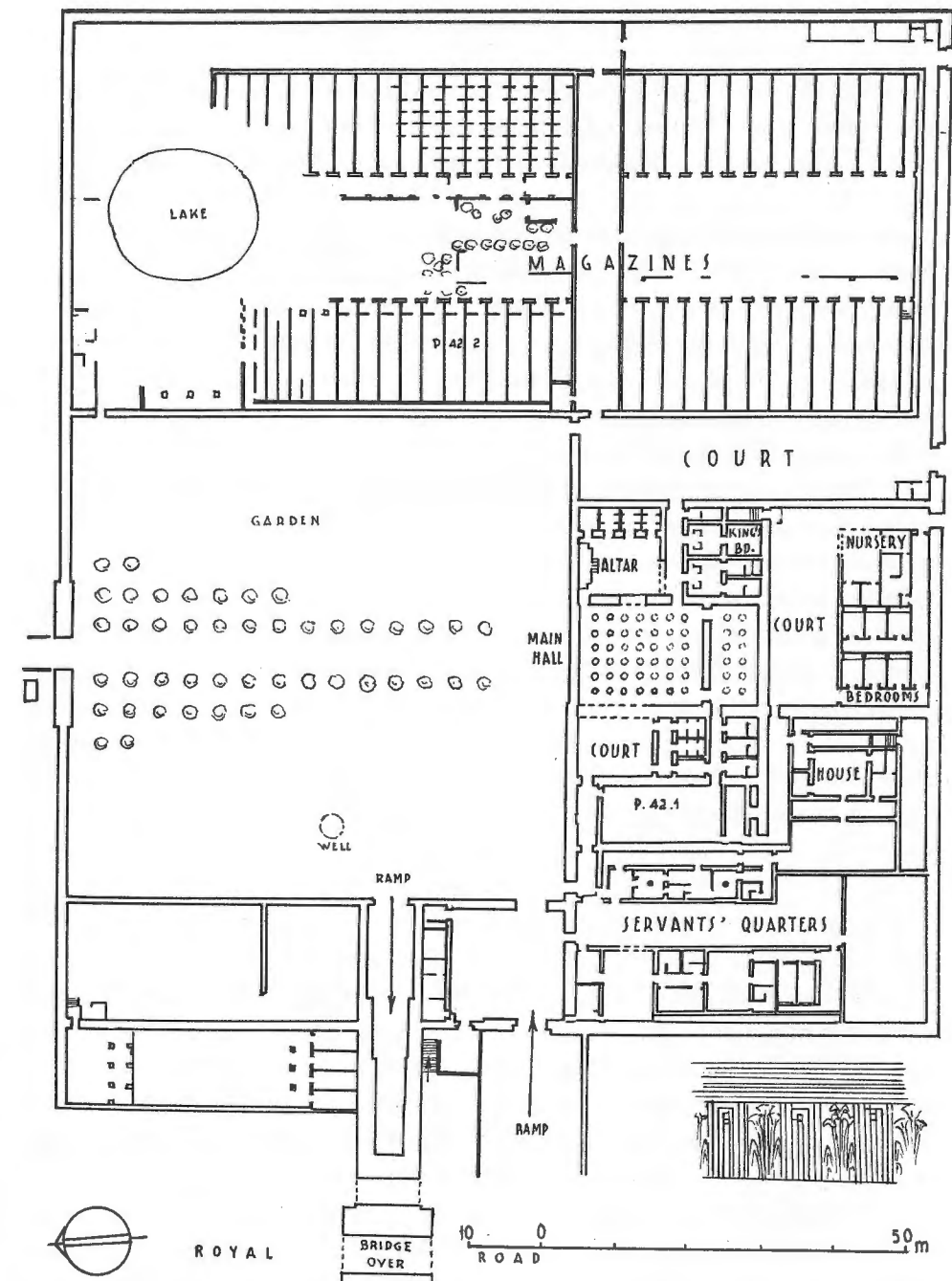
The second division of the plan consists of a huge hall entered through a central doorway and which features 32 rows of 17 square pillars each supporting a ceiling painted to represent a vine on a yellow background. The walls seem to have been inlaid with faience tiles decorated with plant patterns.

The third division is very shallow and is entered from a central doorway. It consists of a court with an area sunk to receive some heavy item, flanked by two deep halls with pillars. The presence of the name of Smenkhkare' would allow for the surmise that this hall was built hastily about the fifteenth year of the reign of Akhenaten to serve for the ceremonies of the association of Smenkhkare' as co-regent to the throne.

*The King's House*⁹⁷

The royal estate laid out to the east of the Royal Road and opposite the official palace consists of an enclosure surrounding a garden, the king's house, the magazines and the royal temple, with the priests' quarters and magazines. The direct connection of this complex with the official palace through the bridge, and its decoration with scenes representing the private life of the pharaoh corroborate the assumption that it was his habitual residence.

A large area in front of the king's house was laid out as a garden, fronted by a pylon on its northern approach and featuring a central alley (N.-S.) bordered with trees in a stepped arrangement. This peculiar arrangement is also to be noted in the rows of offering-tables in the temples at 'Amarna. Two other entrances connect the premises to the bridge and to the Royal Road through a gateway and a ramp. Two lower terraces, the outer one featuring an arbor with a roof on brick piers, border the western side. Two doorways at both ends of the south wall connect the garden to the king's residence (fig. 51).



51. Plan of the King's House and magazines, and detail of painted plinth in main hall.

The plan of the residence is a rectangle directed east-west, clearly divided into two sections: the private apartments accessible from the garden, and the servants' quarters accessible from the front courtyard near the entrance gateway. The latter section is on an L-shaped plan set on the southwest corner, consisting of two sets of rooms on both sides of a long N.-S. court and a large house with a private entrance corridor from the garden. This house is of the usual 'Amarna type: a broad hall and a deep hall out of which various chambers open. To the east of this house is a section identified as the nursery: its buildings are bordered on the north by a court and on the south by a corridor, and consist of two sets of three bedrooms each, probably for the six princesses, and a few other rooms.

The private apartments are located at the north of the complex. The main element is a large hall with wooden columns, in seven rows of six each, with a transverse columned hall at the rear. The main hall is flanked to the west by a court with storerooms and bathroom, and on the east by a large room with an altar and the pharaoh's suite of bedroom, bathroom, and latrine. Screen walls on an L-shaped plan with a curtain on the doorway insured privacy. The walls of all the rooms in this section were decorated with a painted dado representing the symbolic plants of the North and the South alternating with recessed paneling. In the pharaoh's suite marvelous frescoes show the little princesses, the queen, and other scenes.

*The North Palace*⁹⁸

This building, which is much smaller than the official palace in the Central City, does not seem to have been a residential palace, but could have been used as a kind of rest house in a huge garden. The arrangement of series of courts and pillared halls with mangers for antelopes, ibexes, and gazelles and small contiguous cells around a central garden for birds seems to have formed the basic incentive in the creation of this unique complex.

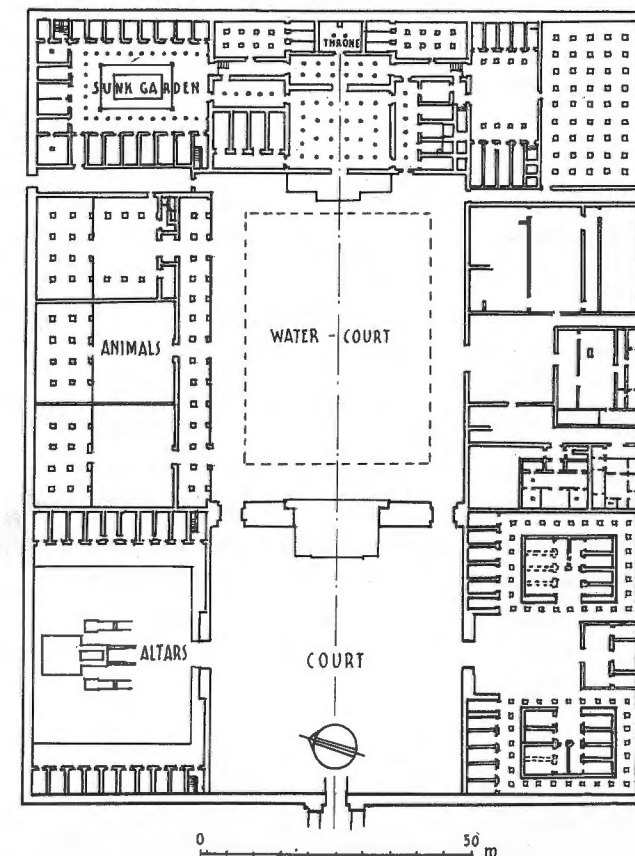
The plan is a rectangle (112 x 142 m., E.-W.), with thick outer walls, divided transversely as well as longitudinally into three sections. In the center of the west wall a gateway opens toward the Nile. In the longitudinal axis, which is oriented E.-W. and passes through the entrance, are a large court separated by a window of appearance from a water court and at the rear a royal apartment, with two hypostyle halls and a throne room.

The north and south buildings bordering the first court would presumably have been dedicated to the ritual of the sun-disk worship, with a sun chapel flanked by two altars and two series of contiguous cells (N.), and by a complex of two symmetrical peristyle buildings (S.).

The second transverse section of the plan consists of the large water court, surrounded by a terrace with trees and bordered to the north by three contiguous identical elements of the zoological garden, and to the south by a complex of buildings, possibly for guards and officials. Each of the three elements is on a tripartite plan, fronted with a common portico on pillars, a central court bordered laterally by a portico and having a small accommodation for guards, and at the rear a pillared hall containing painted mangers.

The rear transverse section features in its middle the royal apartment with a terrace as an approach from the water court to a hypostyle hall, a shallow transverse hall connected to two lateral corridors ending with an observation window, and a throne room with lateral groups of rooms, among which can be recognized a bathroom and a bedroom (S.), with an alcove at the south end (fig. 52). To the north of this royal apartment is a sunken garden surrounded on three sides by a portico and contiguous cells, presuma-

52. Plan of the North Palace at 'Amarna.



bly for birds, as the walls are decorated with paintings of birds and also have small niches cut into them. To the south stretches a complex of a court bordered by a lateral portico fronting five deep rooms and at the rear a huge pillared hall.

The elements of this plan resemble various parts of the other palaces in the Central or the South City. The layout is a beautiful example of an elaborate and symmetrical arrangement to answer the unique program of a zoological garden combined with a royal rest house. When set against the religious background of the period and when compared to such a temple as the Maru-Aten to the south of the city this complex possibly assumes the aspect of a reserve where various specimens of animal life were kept as a symbol of the potentiality of the Creator.⁹⁹ This religious implication is corroborated to a certain degree by the extensive religious establishments in the N.W. courtyard.

The decoration of the whole building shows a uniform scheme: above a black or blue dado are alternate bands of blue and red, separated by a narrow stripe of white, surmounted by a kheker frieze. These bands, turning vertically at the corners of the rooms and again horizontally at the top, form a frame to a yellow background painted with figures of men and animals, mostly birds and fishes. The ceiling is treated as a trellis of vine (cf. tomb of Sennufer; ceiling of the coronation hall). Grapes modeled in glazed mud seem to have formed part of a frieze running as a molded cornice at the top of the walls in the halls (cf. palace of Amenhotep III at Malqata). In one of the cells, the so-called "Green Room," was a masterpiece of painting representing birds in a papyrus thicket, and in another cell, a lively goose—works that provide striking testimony to the skill and taste of the artist.

It has been said that certain elements of the layout are reminiscent of Creto-Mycenaean art (second millennium B.C.) or Asiatic palaces (Lachish, Bogazköy, XV–XIV centuries B.C.).

THE HOUSES

The 'Amarna type of house is remarkably uniform, and this is to be noticed in large houses or middle-class ones¹⁰⁰ in various quarters of the city. The information derived from the excavation of hundreds of houses enables one to arrive at typical examples embodying all the characteristics of the 'Amarna

house. This is essentially a country house on large grounds, surrounded by a courtyard comprising a garden, a kitchen, servants' quarters, and stables or silos, enclosed within a wall.

*General Description*¹⁰¹

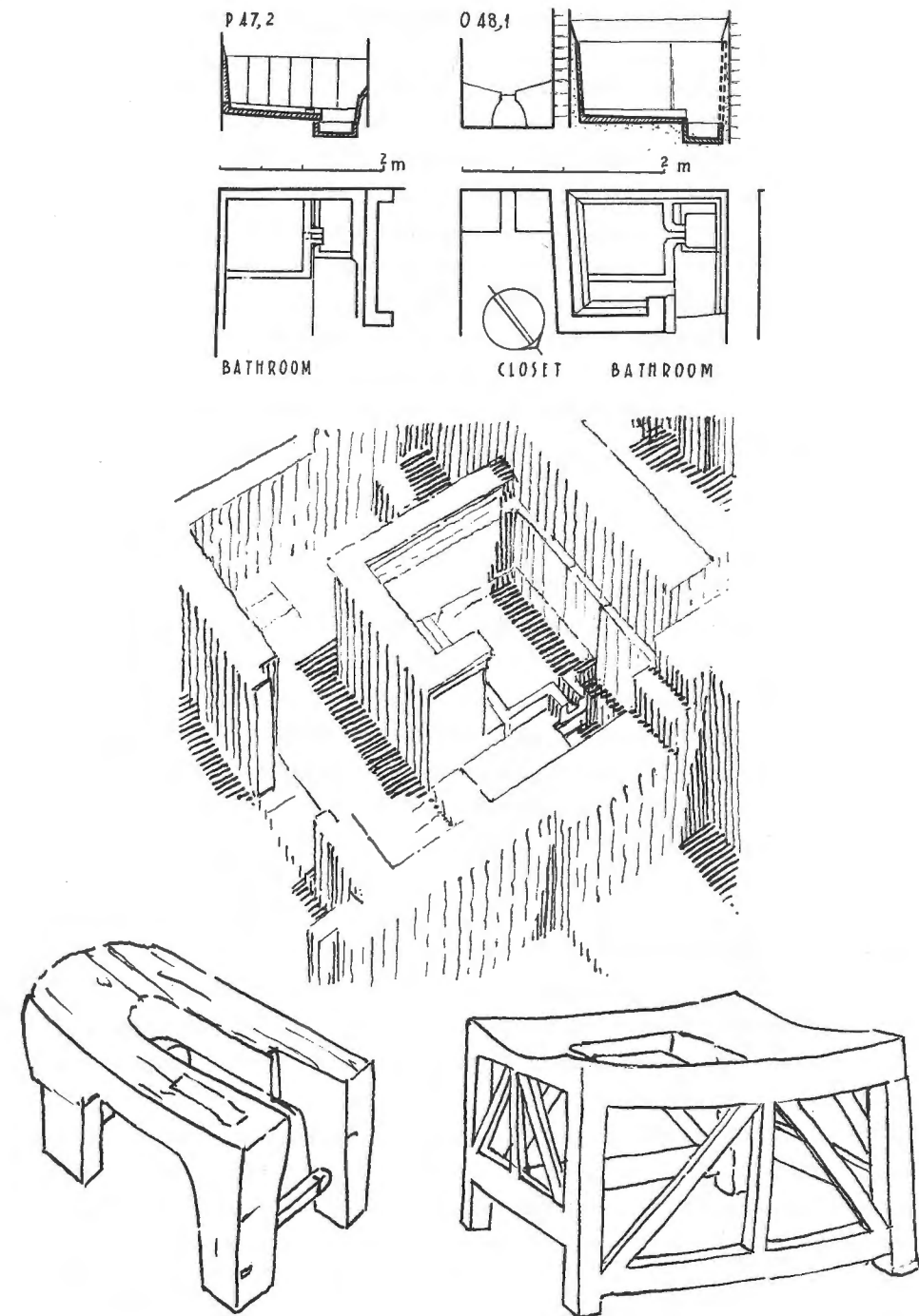
The house at 'Amarna was more of a mansion than of a town house. The plan is squarish (*ca.* 20 m.), oriented parallel to the river, and it consists of two well-defined sections: the public apartments and the private ones, set according to a tripartite grouping of elements. The public section, derived from the living room of the basic plan, develops here into a broad hall, sometimes called a loggia, and a deep hall or central square hall, to which an entrance vestibule is added occasionally or which can be duplicated as two broad halls. Houses differ for the rich, middle-class, or poor owners in that they have two broad halls, one, or none.

A ramp or stairway ascends to a northern lobby, which has been described, on no substantial grounds, as a porter's lodge.¹⁰² Adjoining the ramp or stairway is a broad hall or reception room, sometimes called a loggia on the assumption that it had large windows opening above the steps and facing north. We know from the ancient texts, as well as from climatic conditions prevailing in later times and the present, that the cool breeze blew from the north or west, and the arrangement of a reception room opened on the north and west façades was to take advantage of this characteristic. Many houses have two such loggias with painted walls, one to the north and the second to the west, toward the Nile. Although this opinion has not been proved by actual finds, there is strong presumption in favor of its validity from the actual design of the plan. Nowhere are the presumed locations of these large windows blocked by outbuildings, as it has been stated.¹⁰³

The central hall is square and opens from the loggia. It forms the nucleus of the plan and could have been used as the living room. Its walls are higher than those of the other rooms, allowing for clerestory lighting just below a ceiling carried on wooden columns painted reddish-brown. Enclosing the central hall with rooms would have helped in insulating it against heat in summer and cold in winter.¹⁰⁴ The permanent furniture of the hall features a raised dais as a divan along the middle of the rear wall, a brazier container

sunk into the plastered floor, and a lustration slab, all of which enhance its description as a living room. On the dais were set the cushions and chairs for the owners, who probably had their meals there (color plate VI). Numerous doorways open from the central hall according to a strict pattern of symmetry, and niches in the shape of doorways are set opposite or symmetrical with the actual openings. The larger niches, which contain a stela representing the royal family and one inscribed with a prayer to the Aten disk, have a ritual significance and form a domestic shrine. At the top of the walls a frieze of plants such as water lilies or of festoons of fruit, pendent ducks, flowers, and ribbons sometimes supporting a small shrine forms an original item of decoration. Doorjambs could be painted with horizontal stripes of various colors, while the ceiling could be a rich blue (house of Nakht). On the sides of the central hall are rooms in one of which a staircase in two or more flights rises to the terrace. In large mansions a columned loggia is built above the broad hall and perhaps also above some other rooms.

The private apartments of the house consist of a square hall, the master's bedroom, smaller rooms, a bathroom, and a latrine. The square hall is similar to the central hall but smaller, fitted, however, with the same type of furniture. It is lit through windows opening high in the south wall. This hall probably forms the women's quarters. The master's bedroom, the most private of all the rooms, usually set in the S.W. corner, is accessible from the hall or from a lobby. It is recognizable from the alcove for the bed, somewhat narrower than the room and set in its rear part on a raised floor. Small stone blocks in the shape of a truncated pyramid were placed under the feet of the bed. This alcove was not only an aesthetic creation: the greater thickness of its walls allows for the surmise that it was roofed over with a vault carried high above the ceiling and opening on the terrace as a ventilator. All the representations of the palace clearly show that the royal bedroom was provided with such a device to let in the cool north breeze. Near the bedroom are grouped a bathroom, latrine, and robing room. The bathroom is fitted with a slightly inclined stone-slab floor and the walls are lined to a certain height (0.5 m.) with battered stone slabs (fig. 53) to insulate against dampness from splashing. The drainage of waste water is provided for by setting a basin beneath the spout of the floor slab in the bathroom, or by drainage channels running through the outer wall into a vessel or into the desert sand. Often only a party wall (1.25 m.



53. Details of bathroom and latrine with isometric view, restored, of bathroom ('Amarna) and two wooden closet seats (Thebes).

high) separates bathroom from latrine. The latrine is a simple earth-closet with removable oblong vessel placed under the slit in a brick or wooden seat (see fig. 53). In the side rooms transverse low walls abutting against the main walls carry wooden frames used as shelves for the storage of linen, as in the Theban palaces and temples. In the absence of any water pipes the bathroom can be pictured as a primitive shower system whereby water was poured on the bather by an attendant from behind the party wall.

Brick is the usual material for the walls, supplemented by stone for the bases of columns and even for doorways. Columns, roofs, and staircase supports are of wood. Floors are of mud or of brick, whitewashed and painted.

The outbuildings are set according to a certain layout. The main entrance doorway at an end of the enclosure wall opens onto a pathway bordered with trees growing in puddles of Nile mud which leads to a small chapel. This is raised on a rectangular socle fronted by a stairway and it consists of a minute pillared porch and a roofless shrine with an altar for the Aten. From the chapel the pathway turns at right angles toward the house, which is surrounded at its rear by the outbuildings: granaries, storerooms, chariot room and stables, servants' quarters, and kitchens. This monumental approach emphasizes the religious ideology through the layout of the chapel in the axis of the doorway; and the right-angled pathway to the house as its second element certainly denotes a refined skill in design.

The granaries are in the shape of truncated silos on a circular plan, covered with cupolas. Two contiguous silos are paired, with a stairway winding up to the aperture through which grain was poured. A square doorway opens at the bottom to empty the silo. Magazines or storerooms are deep rectangular contiguous rooms. Stalls and stables for horses sometimes show an extremely ingenious device: a stone-paved standing place for the horses with a built-up manger and tethering-stones is bordered by a feeding-passage running behind the manger and accessible from the outside.

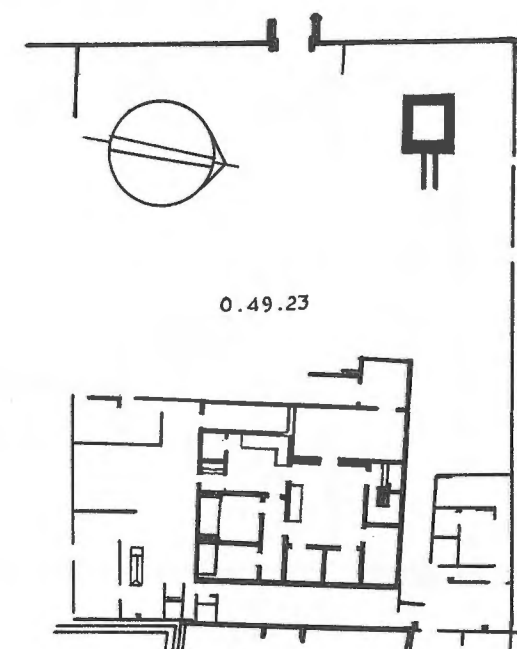
The servants' quarters feature a large room with pillars. The kitchens, to which sometimes the living quarters for the cook are appended, contain a range of simple pottery ovens. The latter consist of cylindrical jars, about 1 meter high, open at both top and bottom and thickly coated with mud or brick. A small stokehole was at the bottom while the flat loaves were introduced from above. Built-in racks for drying and storing loaves, and a cement-coated slab for mixing dough are provided in an adjacent room.

The well is an essential element in such a mansion: that of Ra'nefer (N. 49.18)¹⁰⁵ has a circular shaft in which a stairway (3.4 m. diam.) descends in two flights to a ring platform (1.8 m. deep) around the well itself (1.5 m.), reaching down to the subsoil water level. There was no pond in the desert soil of these gardens and what was first thought to be such a pond turned out to be the cluttered remains of damp soil around the wells.

This picture of a typical mansion or villa at 'Amarna is based on the plan and whichever elements such as columns, bases, and doorjambs that have withstood plundering and weathering after the city was abandoned. Usually the remains of lesser houses are better preserved.

Typical Examples

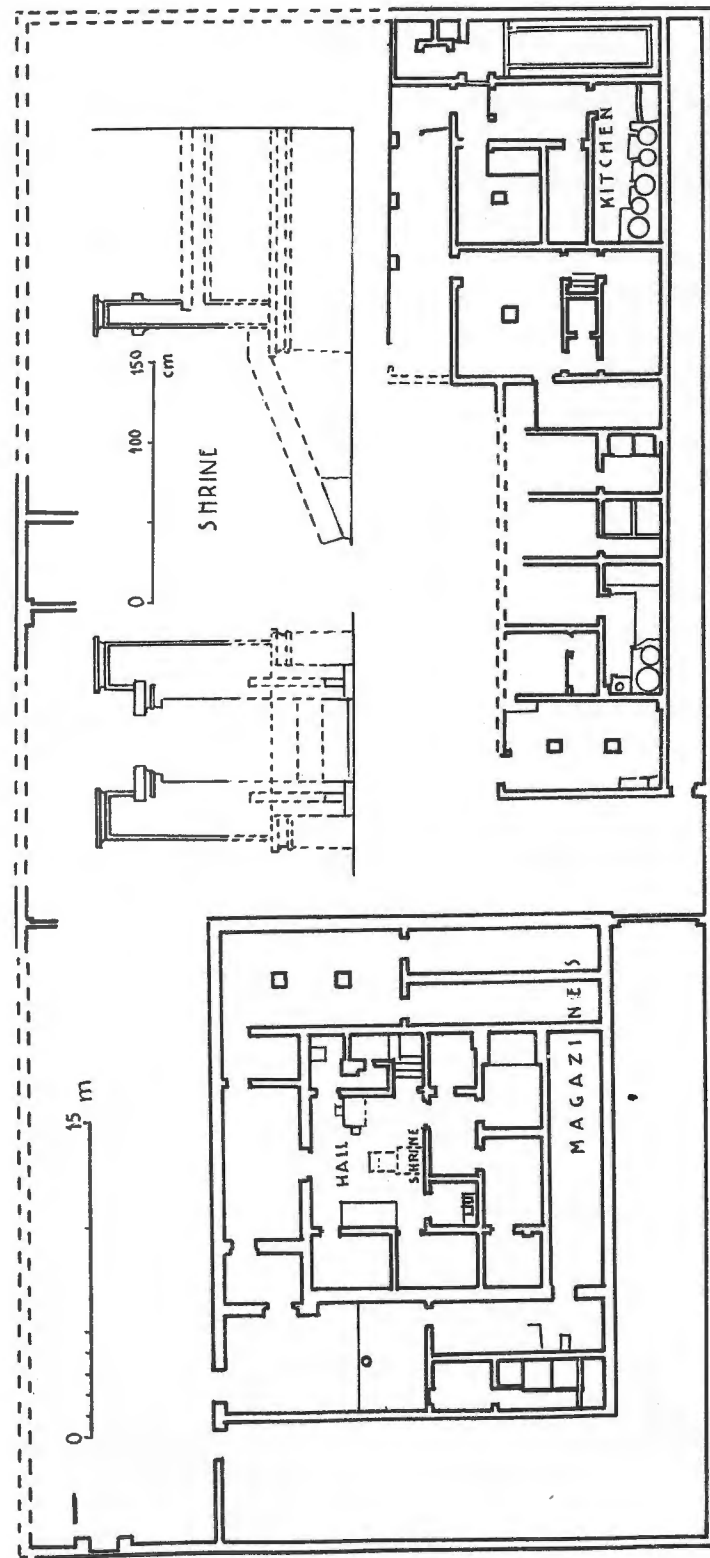
HOUSE 0.49.23 (SOUTH CITY).¹⁰⁶ A rectangular enclosure (3.33 m. high) surrounds the grounds which are entered through a central doorway from the street. Near the entrance is a chapel facing east (fig. 54). The house stands at the back of the court and is on a typical modest plan. The entrance opposite the street gate leads to a loggia along the west side. The central hall has a divan on its south wall, a door to the staircase (N.), and is surrounded by small rooms and an inner reception room with an L-shaped divan. The bedroom near it has the usual rear alcove. Various outbuildings abut on the residence.



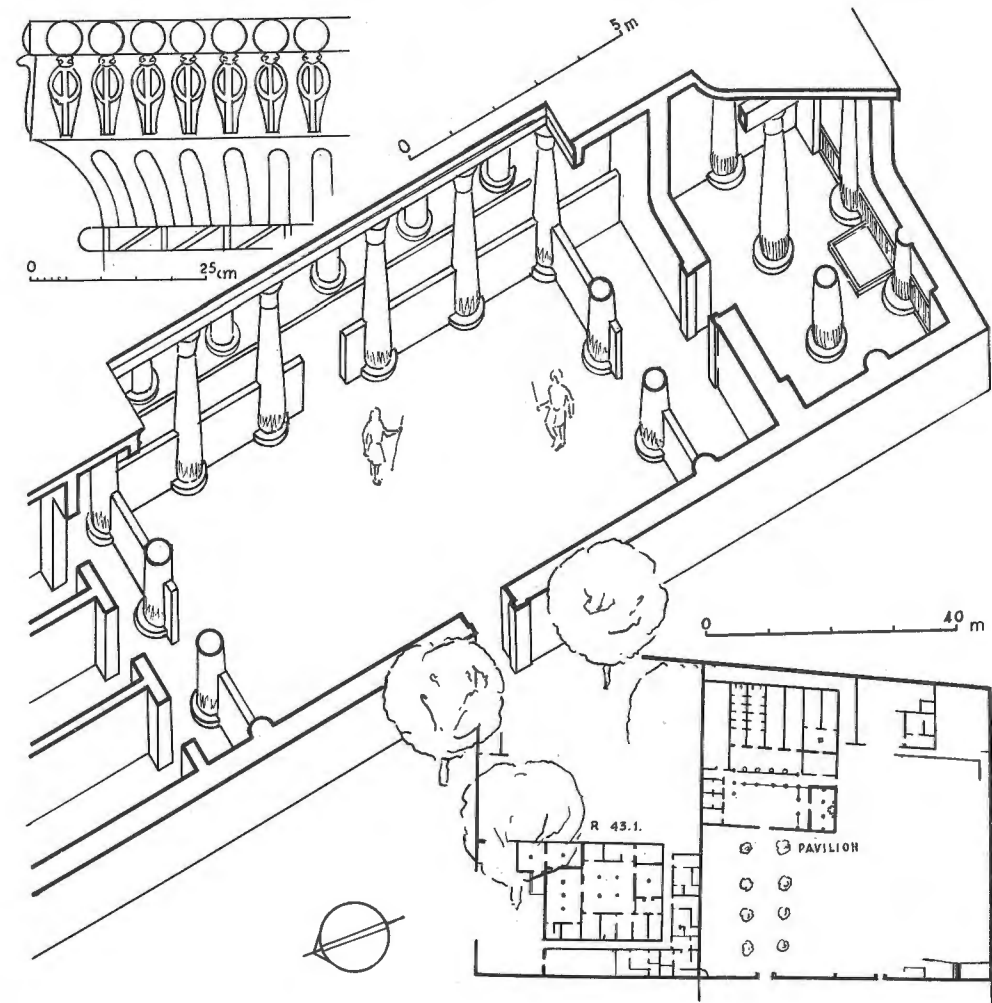
54. Plan of villa 0.49.23 in South City at 'Amarna.

THE OFFICIAL RESIDENCE OF PANEHSY (CENTRAL CITY).¹⁰⁷ Near the southeast corner of the temenos wall of the Great Temple is the state building, characterized by the absence of women's quarters and by the extensive kitchens laid out near it. Panehsy, Superintendent of the Cattle of the Aten, has a large private mansion in the main city. This building is his official residence. An entrance lobby leads into the north loggia, connected to the central hall containing a divan and a miniature shrine approached by three steps rising to the sculptured gateway with broken lintel. A staircase ascends to the terrace. The bedroom is at the rear of the plan. The magazines are embodied in the house, within the walls of the structure (fig. 55).

56. House R.43.1 at 'Amarna (S. E.): plan, isometric view of pavilion, and detail of cornice.



55. Plan of the official house of Panehsy and elevations of the shrine in the central hall.



HOUSE R.43.I.¹⁰⁸ This is one of the few houses on the southeast boundary of the Central City. It is adjacent to a pavilion. The house is of the large type with an entrance porch, lobby, north loggia with three columns, central hall with four columns, women's quarters, and a first story (fig. 56). Along the west and south sides of the house runs a passage out of which open storerooms.

The painted pavilion perhaps connected to the house stands at the rear of a large garden. A large hall stretches behind the west façade and is surrounded by a passage bordered by lotiform columns with a low screen wall painted blue. To the south a columned hall has a shrine along the rear wall and is roofed over with a ceiling painted with ducks and butterflies. To the east of the main halls are four deep storerooms with brick supports for shelves. It is to be noticed that the antae at the end of a row of columns take the shape of engaged columns, a rare feature in Egyptian architecture.

THE HOUSE OF THE VIZIER NAKHT (SOUTH CITY, K.50.I).¹⁰⁹ This is an excellent example of a large house (35 x 26 m. = 880 sq. m.). A stairway along the north wall ascends to a lobby with two columns, beyond which are an anteroom with one column and the north broad hall or loggia (fig. 57). This is the largest room of the plan, facing north and having eight wooden columns supporting the blue ceiling. Its walls are decorated with friezes of flowers. A similar, though smaller, loggia with six columns stretches along the west side. Three doors lead from the north loggia to the central hall, which is on a square plan (8 m. side) with four columns and a brick divan (E.) in front of which is a portable hearth. On the opposite wall a lustration slab for water jars is set on a high platform (2.0 x 1.33 m.). On either side of the lustration slab a door opens onto the western loggia. A staircase off the central hall leads to the upper story. In its south wall a large doorway and a lateral one open onto the private apartments. A niche set symmetrically with this side doorway is painted red with yellow hieroglyphs and a scene representing Akhenaten worshipping the cartouche of Aten.

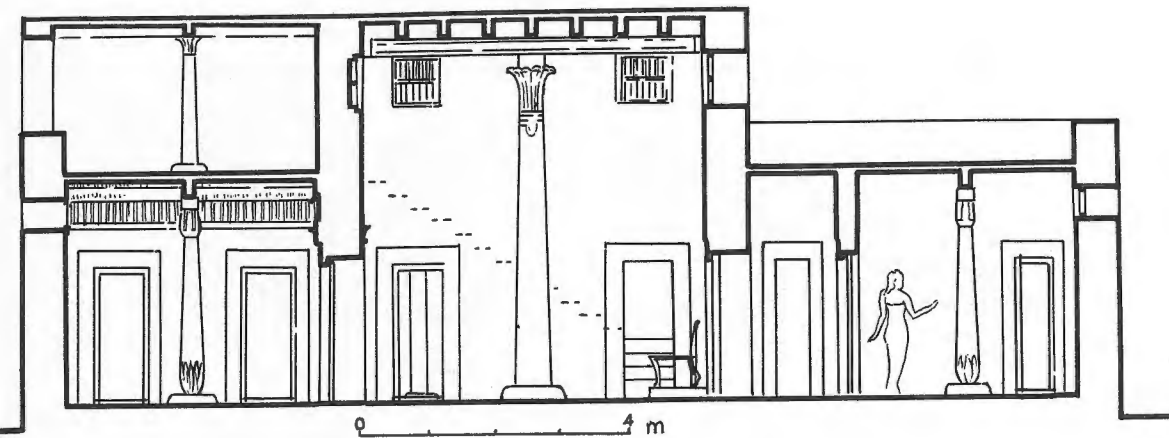
The central room of the private apartments is a square hall with one column, probably the women's quarters, surrounded on three sides by small rooms, the chief ones being the bedrooms of the vizier and his wife. Near each are a bathroom and a latrine with cemented floor. Two robing rooms about the private sitting room are recognizable from the broad shelves set on brick supports.

There was an upper story whose column bases were found fallen on the ground floor. This upper floor covered an area around the central halls, probably north over the reception room. All the floors were paved with large mud slabs, whitewashed and occasionally painted.

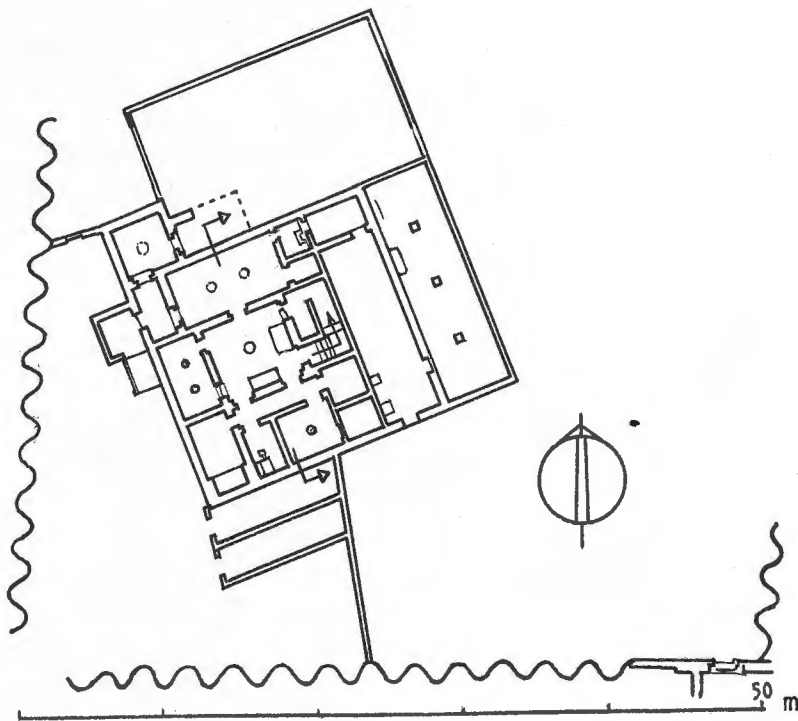
HOUSE V.37.I (NORTH SUBURB, S.E.).¹¹⁰ Among the special features of this mansion, of rather modest size, are the importance of the public section relative to the private one and the adjunction of the kitchen and servants' hall within the plan of the main structure. A sinusoidal wall surrounds the grounds, which are divided by two subsidiary walls between the house and the enclosure.

57. Plan of the house of the vizier Nakht and restored perspective of the central hall.





58. Restored N.-S. section of house V.37.I.



59. Plan of house V.37.I.

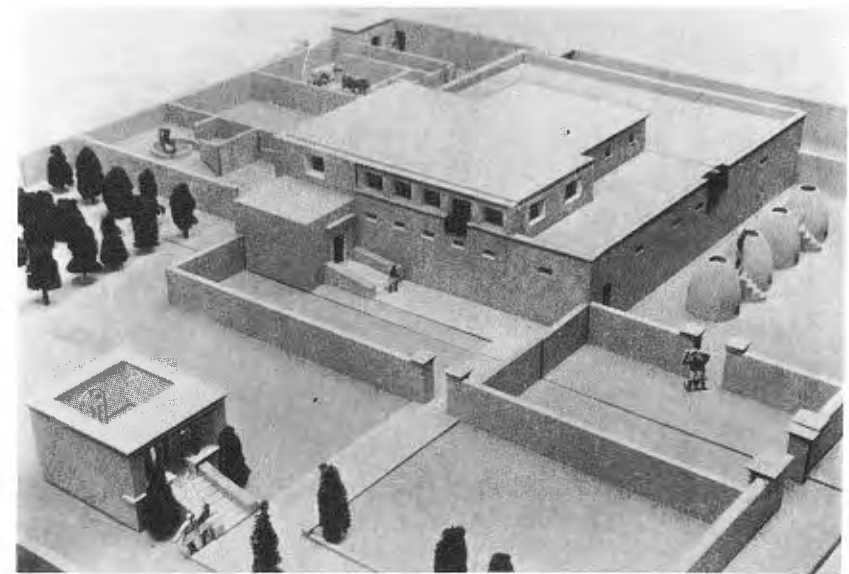
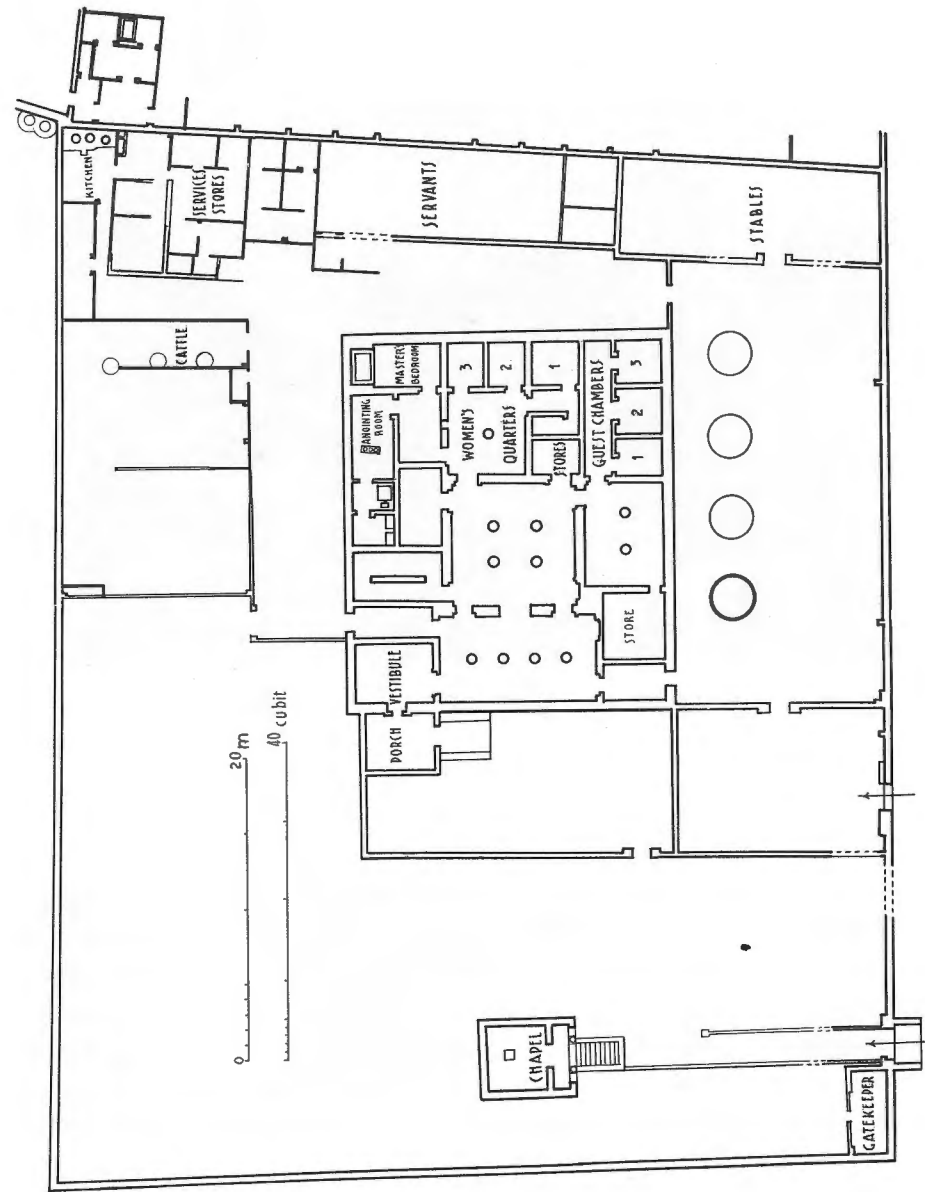


Plate 6. Model of a mansion (T.36.II) at 'Amarna.

The plan consists of an entrance lobby, a north loggia with two columns and a western one also with two columns, and a central hall with one central column off which a staircase ascends to the first story (figs. 58, 59). The private apartments have a columned hall, a bedroom, and dependencies. Many painted plaster fragments have been found, the most original of which is part of a frieze representing upper window-gratings from the north loggia or front reception hall, probably modeled and painted for symmetry or to embody the actual windows.

HOUSE T.36.II (NORTH SUBURB, S.W.).¹¹¹ The grounds are surrounded by a rectangular wall and bordered by two streets (pl. 6). In the axis of the main entrance doorway an alley lined with trees leads to the hypaethral chapel in



60. Restored plan of house T.36.36 and detail of the decoration of the beams.

the garden, then turns at a right angle to lead to the entrance to the façade of the house itself. This one is of the rich type: porch, vestibule, two loggias, central hall, women's quarters, and master's bedroom suite (anointing room, bathroom, closet). All the rooms, even the private apartments, are decorated. In the large rooms the ceiling consists of a deep main beam supported on columns painted with a rectangular block pattern, crossing smaller beams painted pink. Adequate information could be gathered relating to the elaborate sanitary equipment. In the anointing room a monolithic block into which are cut three depressions, one still retaining salt crystals, was used when anointing the master who sat on a stone chair. The next chamber is a shower bath in limestone, where water was poured by a servant standing behind a screen wall. The latrine contains a pierced stone seat between sand compartments (fig. 60; also see fig. 53).

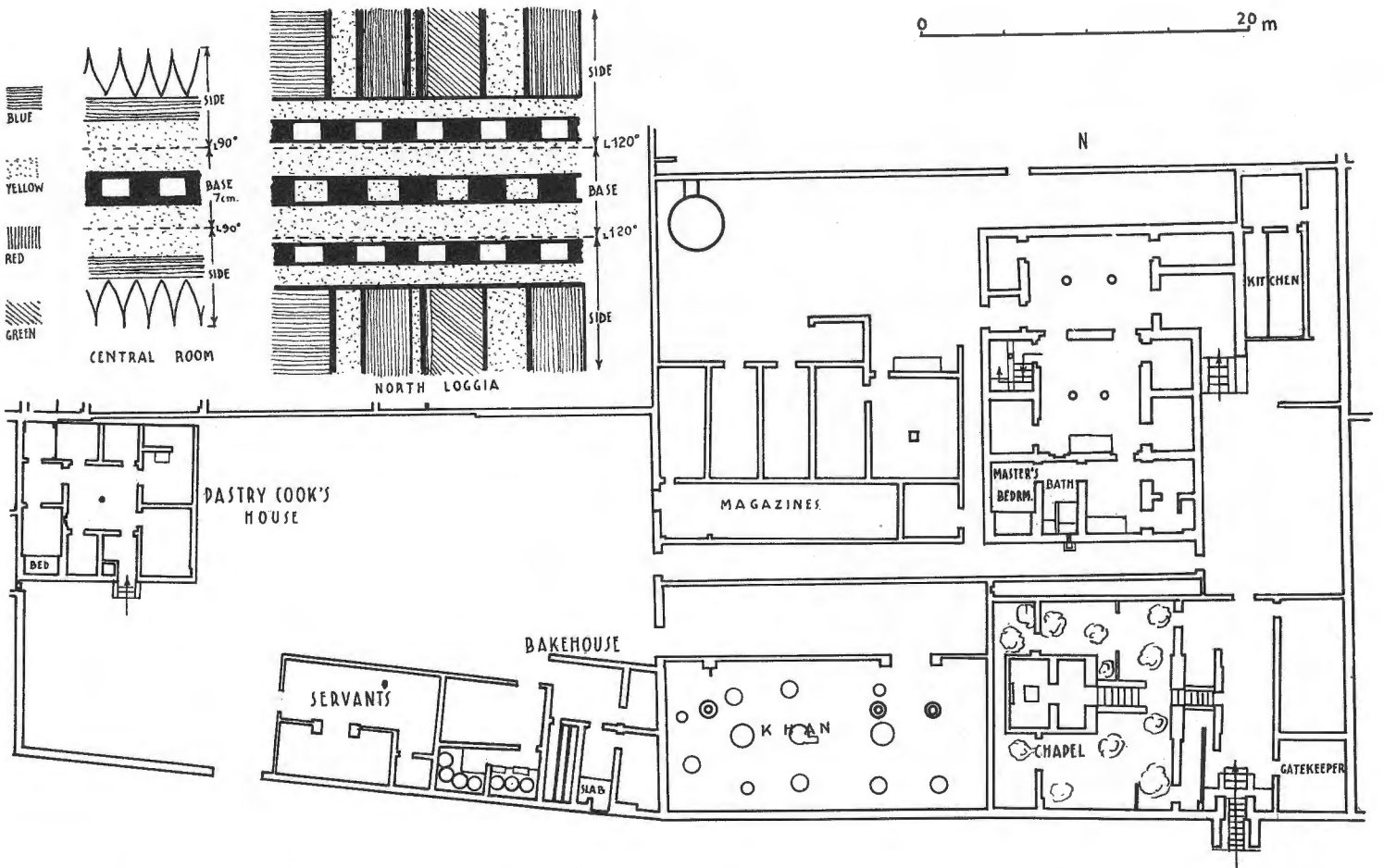
Two pairs of silos, stables, servants' quarters, and kitchens form the out-buildings which stretch along the enclosure wall behind the house.

HOUSE T.36.36 (NORTH SUBURB, CENTRAL CITY, WEST).¹¹² The grounds are almost completely covered with buildings. No western hall was built, though the plan features the usual set of rooms on a small scale. A chapel preceded by two pylons stands on the left side of the entrance alley which leads directly to the porch of the house. The kitchen adjoins the house on one side and the magazines adjoin it on the other. A long passage connects the court of the house to that of the services. The "khan" or stables is accessible from the adjoining service court in which a bakehouse, the servants' quarters, and a chief-cook's house are also built (fig. 61).

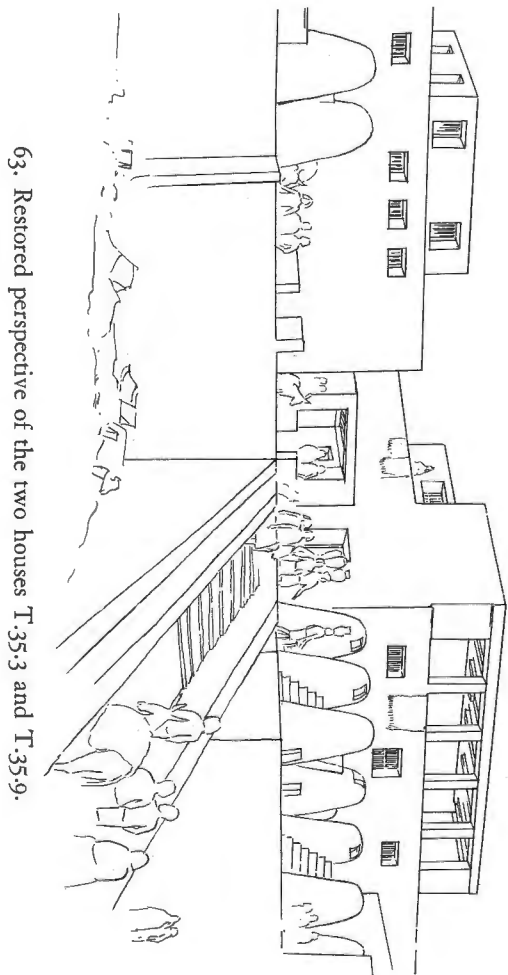
The bakehouse is recognizable from its characteristic layout: flour was first kneaded into dough on a slab in a special room, then exposed in another one on long racks, and finally baked in seven ovens in the nearby room.

HOUSES T.35.3 and T.35.9 (NORTH SUBURB, N.W.).¹¹³ These two houses are crowded with buildings and leave no area for a garden. A stairway leads from the depression south up to the entrance of House T.35.3. This is of the medium-sized type, with a front north hall with two columns and a central hall with one column (figs. 62, 63).

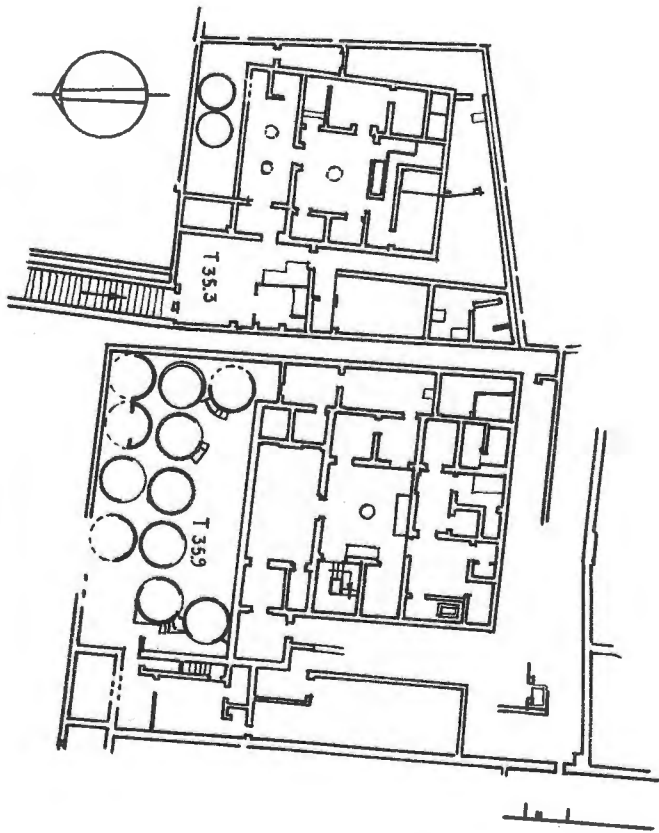
House T.35.9 adjoins the former one and is entered from the south. A chapel is set at the turn of the pathway to the entrance porch. The location of the chapel is here also skillfully emphasized in the layout (cf. T.36.11). The



61. Plan of house T.36.36 and detail of painted decoration on beams from the central room and the north loggia.



63. Restored perspective of the two houses T.35.3 and T.35.9.

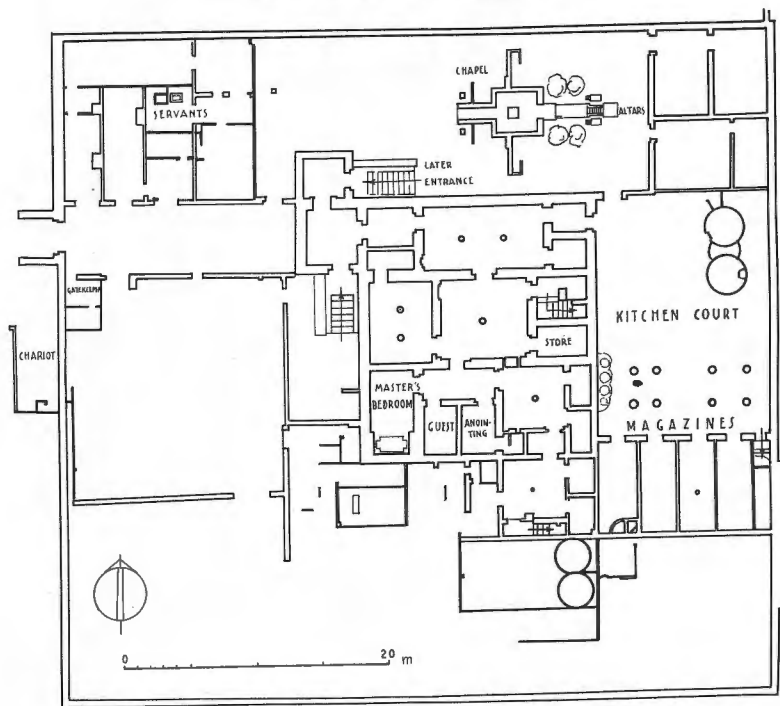


62. Plan of houses T.35.9 and T.35.3 in the northwest quarter at Amarna.

plan of the house is similar to that of T.35.3. Numerous silos are erected in front of the north façade.

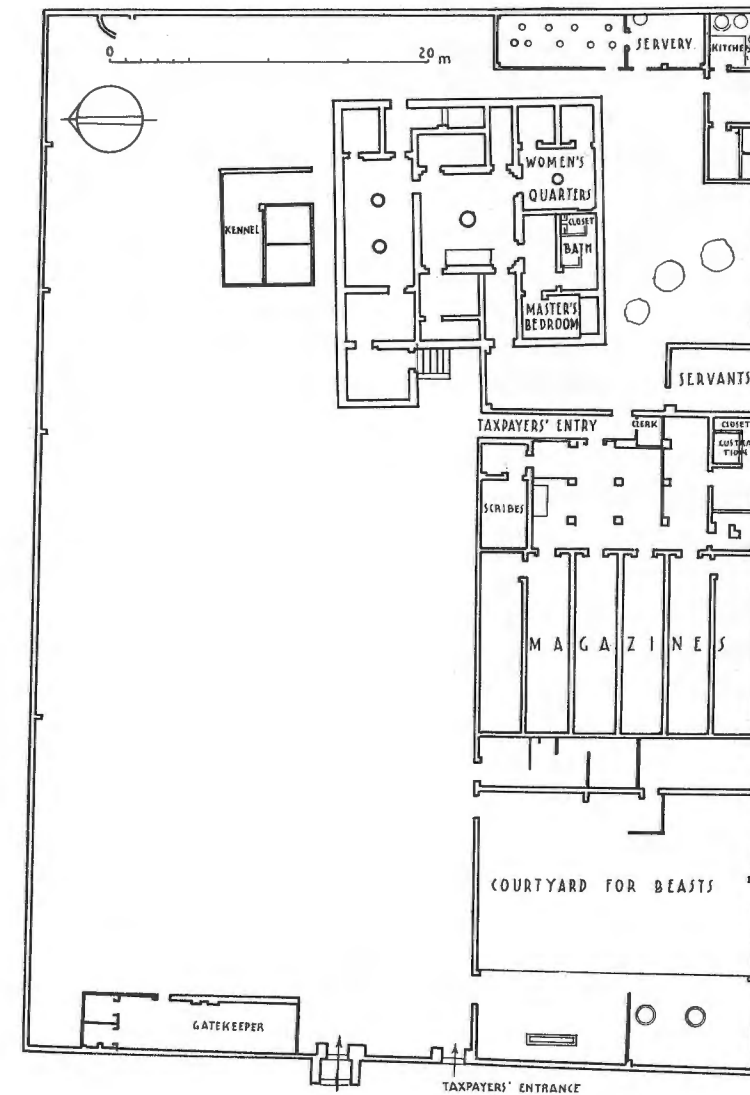
THE HOUSE OF THE ARCHITECT HATIAIY (NORTH SUBURB, T.34.1; 34.4).¹¹⁴ This nearly square estate (54 m. side) was surrounded by a wall 3.05 meters high, entered from the west. The original western porch was soon replaced by a northern one and the pathway ran along the axis of the fine chapel with three altars, an unusual feature. The house is of the common type, with much stonework (doorways 1.88 m. x 0.7 m., threshold painted red). The second flight of stairs was supported on sloping beams. The upper story extended over the women's quarters. A small building had been added to the south. The dependencies about two sides of the house. The entrance doorway is flanked by two lateral walls projecting into the street and near it, on the inside, is the small lodge of the gatekeeper (fig. 64). On the outer side of the enclosure wall, near the gate, is the chariot house.

64. House of Hatiai, T.34.1; 34.4.



HOUSE V.36.7, 12, 13 (NORTH SUBURB, E.).¹¹⁵ It has been assumed from the unusual features of the sanitary equipment attached to the portico fronting the deep magazines that the latter were to receive the taxes paid in kind under the supervision of the houseowner, probably the official in charge of the tax collection. The house proper features two exceptional characteristics: the re-

65. Plan of the tax collector's complex of buildings at 'Amarna.



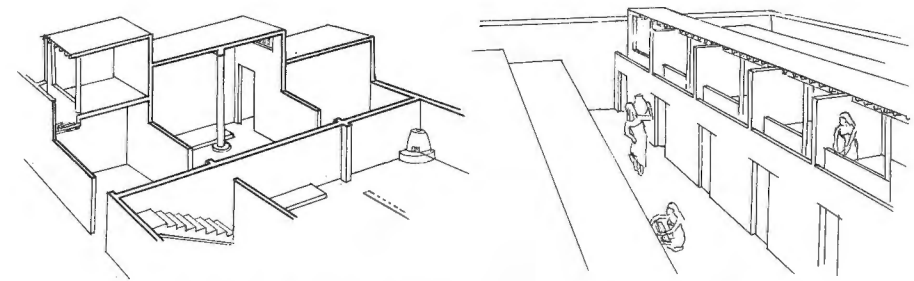
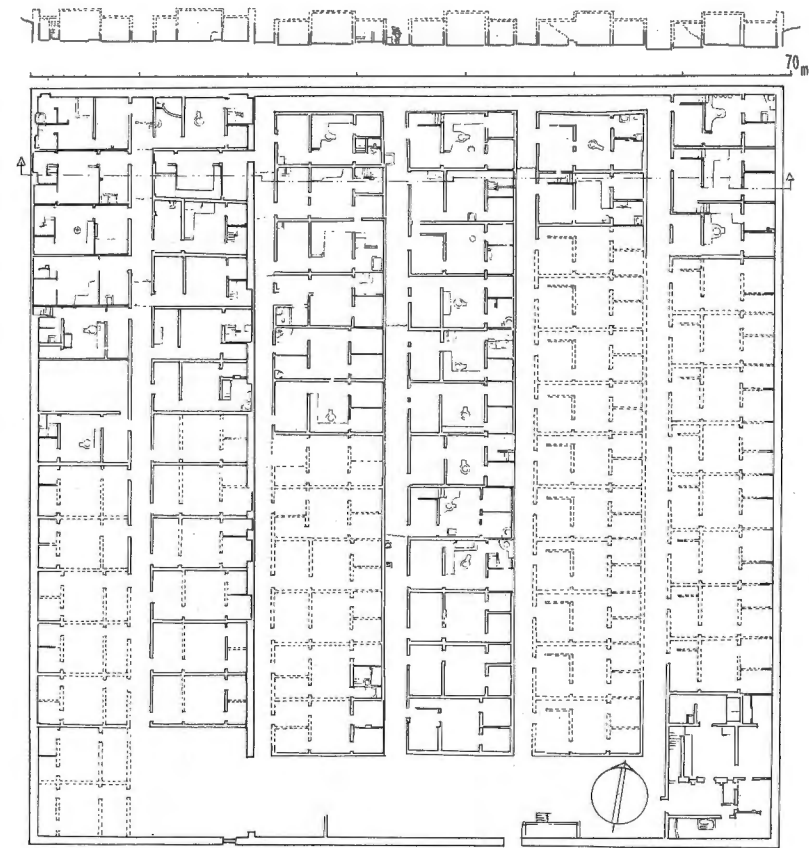
ception hall and the central hall are connected by one door only which opens at the farthest end of the wall between both, and the central hall is directly accessible through a short corridor from the back court, thus providing a shortcut to the complex of the magazines (fig. 65).

*Town Planning in the Eastern Village*¹¹⁶

This village resembles in many respects that at Lahun which had been built five centuries earlier for the workmen and priests on the pyramid of Senusert II. This one, located in a lonely spot to the east of 'Amarna, was intended for the artisans on the rock-cut tombs. It features a wall 70 x 70 meters square, oriented to the cardinal points enclosing a uniformly planned settlement, and uses a typical housing unit attached side by side in single rows along N.-S. streets. It is also divided into two unequal sections by a wall running N.-S. through the whole width. The area of the section to the west is, as at Lahun, two-fifths of that to the east. In the eastern section four rows of uniformly planned houses facing west are set side by side along four streets running N.-S. A north passage and a south place run along the ends of the streets. A larger house, probably that of the superintendent, occupies the southeast corner of the settlement. The western section was built later and consists of two rows of houses, quite similar to the others, but opening east and west on one single street N.-S. It is noteworthy that the doorways of opposite houses never open in the same axis, thus exhibiting a refined device to insure privacy.

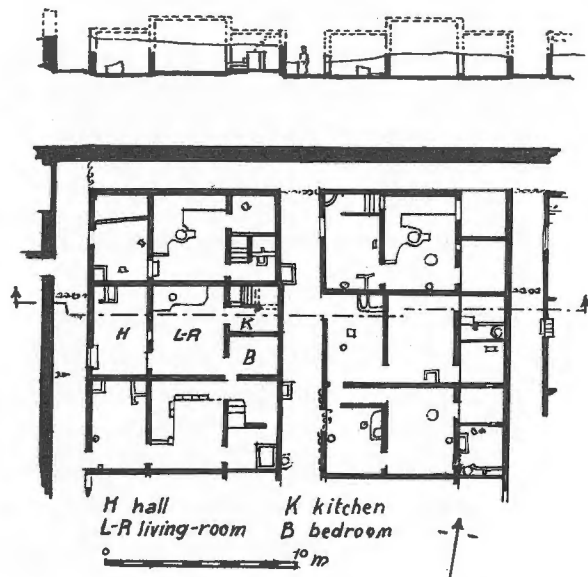
The layout of the streets running N.-S. is similar to that at Lahun, although at the latter site the houses are of various types grouped in zones according to the different classes of the inhabitants, whereas those at 'Amarna village are on a uniform pattern. The architect chose a square of $18\frac{1}{4}$ cubits (ca. 10 m.) side as the area for two contiguous houses and used it as the module for the layout. The westernmost row has fourteen such houses (fig. 66). They were built after the enclosure wall, beginning from the south end of the streets. The architects contrived to build walls on an L-shaped plan for the houses abutting on the enclosure wall (E. and W. rows).

The single street of the smaller section communicates with the south place. Originally it had a special gateway in the south enclosure wall, but this was soon bricked up. The only gateway is in the axis of the larger area of the village, to the east. Near it, on the inner face of the enclosure, is a shrine.



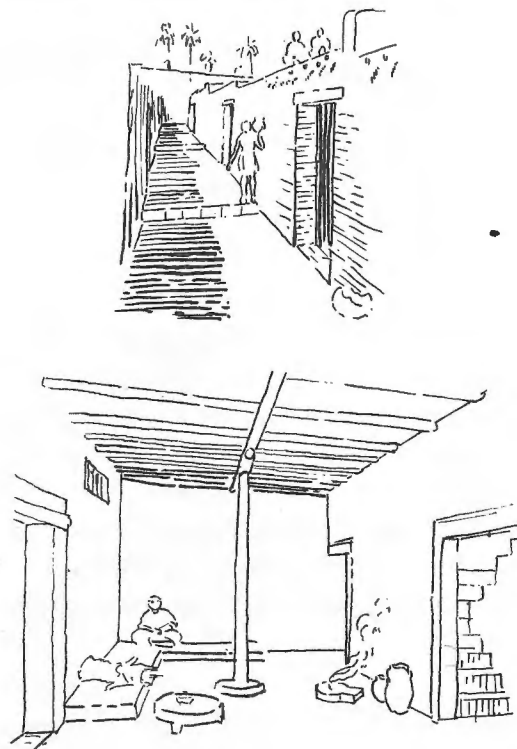
66. Plan of the workmen's village in 'Amarna East.

Water was carried from the Nile and stored in large jars set on stone bowls in the streets against the façades of the houses. Brick mangers were also built against the wall or pegs for spinning were fixed to it. The village is of outstanding importance regarding the study of town planning in Egypt for it provides clear data for an estimation of its population at ca. 313, and hence the coefficient of density of population as 15.65 square meters per person (see p. 61).



67. Detail of some of the houses in the workmen's village.

68. Restored sketches of a street and the main hall of a workman's house in the workmen's village.

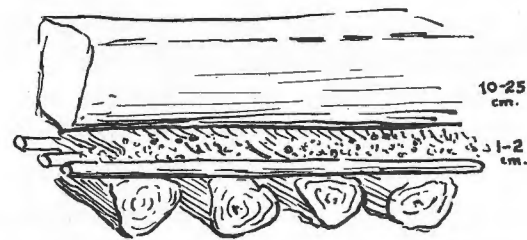


GENERAL DESCRIPTION OF A HOUSE (figs. 67, 68). The house grounds measure $9\frac{3}{4}$ cubits (9 cubits 2 palms [nearly 5 m.]) as frontage and double that measure as depth. The flimsy construction of the walls (2.1 m. high, 0.35 m. thick, 0.13 m. for the internal partitions) would not allow for the erection of an upper story. The tripartite plan is divided into three unequal parts by two transverse walls; the front room is the largest. The rear section is again divided into two small rooms. The plan features four rooms: an entrance hall or courtyard, a living room, a bedroom, and a kitchen with a staircase rising to the terrace, perhaps to some awning erected there. In some houses the staircase or the kitchen had to be placed in the entrance hall. It is noteworthy that the constant orientation with the longitudinal axis of the house E.-W. allowed for the early rays of the sun to light the bedroom and the kitchen, while the low sunset rays would penetrate into the front hall and even into the living room through the clerestory. The entrance or front hall (5 x 2.0-2.5 m.) opens onto the street through a doorway at one end of the façade. A brick manger and brick tethers prove that animals were kept in this room. Sometimes a workshop, looms, hearths, and ovens indicate the various activities of the inmates in this front hall.

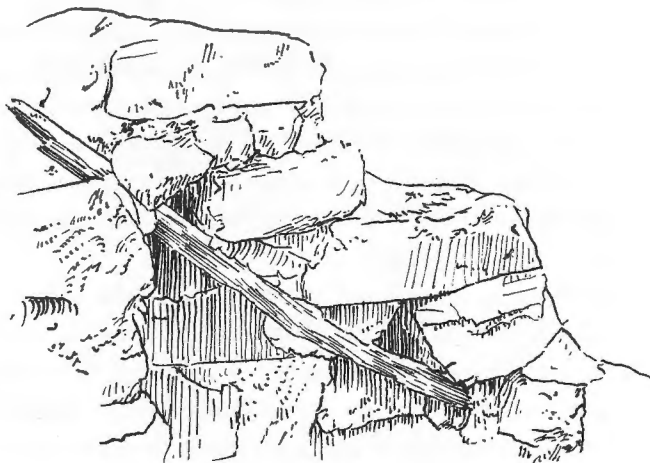
The living room is squarish in shape, with a central post or column to support the roof, and was the place of gathering at meals or after sunset. A brick dais (0.1-0.2 m. high) abuts on one or two sides of the room and was used as a divan, covered with mats or rugs. In the chilly days of winter a fire was kept burning in a hearth consisting of an earthenware bowl set in a ring of mud. Jars stand on the floor or are sunk under it and are used for storage. Water is kept in other vessels set on a limestone base, sometimes connected by a drain to a pot buried under the floor. Stone disks (5-10 cm. thick) are used as tables or seats. Saucers of oil with a wick served as lamps and were fixed on two pegs plastered into the wall or were set in niches about 1 meter above the floor. Walls are occasionally painted with frescoes and tempera.

The identification of one of the two rear rooms as a bedroom is controversial, though some data could point to such a use. There were sometimes low walls to carry a wooden shelf, possibly a simple frame with rush mattresses for the storage of robes and linen. Lamp niches are also cut in the walls of these rear rooms.

The kitchen is as large as the bedroom and adjacent to it. It often has two or three storage bins, an open hearth, and a cylindrical oven for bread. Such an



69. Cross section of roof in house No. 11 in East Street at 'Amarna.



70. Detail of a stairway upon beams.

oven is similar to those in the main city at 'Amarna (and also to modern ones) and consists of a large pot thickly plastered with mud, with a draught hole at the bottom and a large aperture at the top, to be closed with a lid. Dough on a platter of clay was left to rise and then set in the oven. Baked loaves were stored in a deep basket so that they would remain hot as long as possible. A stone mortar sunk in the floor was used for bruising wheat and grinding grain by means of a big pestle of hard wood (0.95 m. long). The kitchen appliances consisted of a cooking pot of thin earthenware, amphorae, bowls, baskets, and trays.

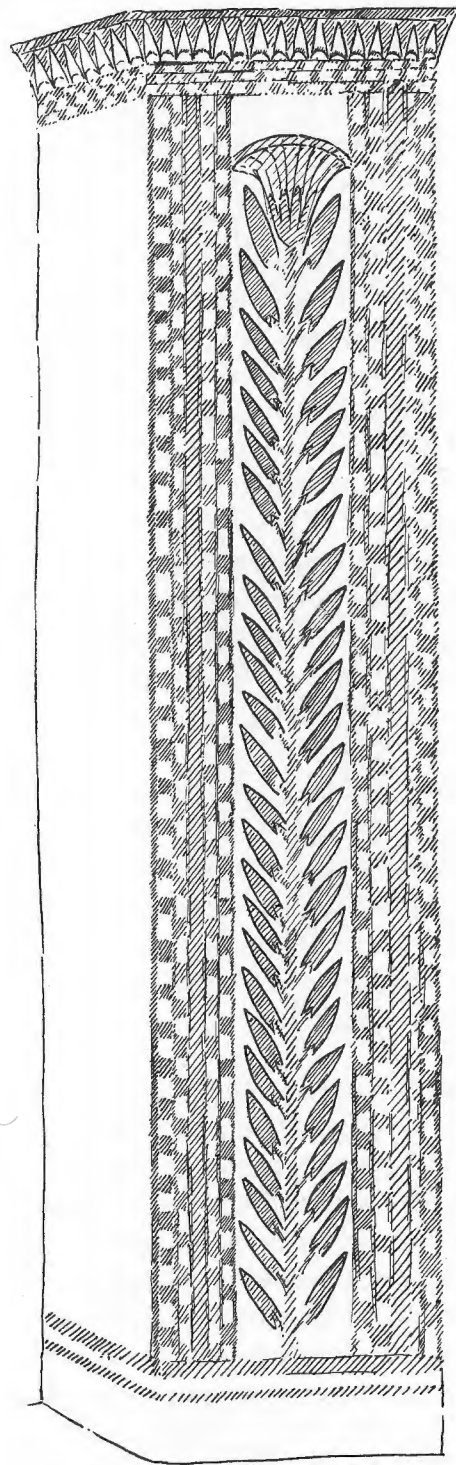
The location of the staircase is the only element that leads to some variation in this general scheme. When the staircase monopolizes one of the

rear rooms the kitchen is removed to one end of the front entrance hall, behind a low screen of brick. Otherwise the staircase is built in the kitchen itself, even though this small room is already quite crowded.

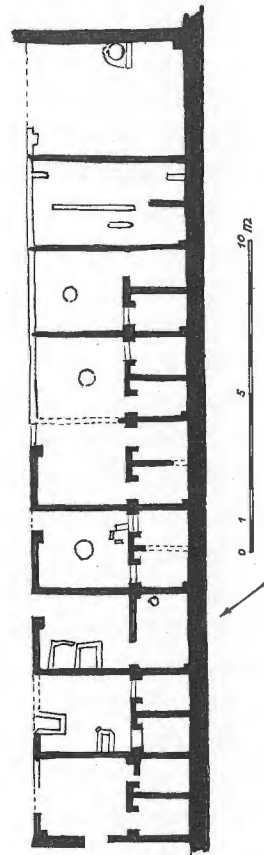
Brick walls are mere partitions (0.13 m. thick) and carry roofs of poles and sticks set crosswise, covered with twigs and plastered with earth and mud (0.1-0.25 m. thick, fig. 69). Sometimes matting or brushwood is used instead. Where the span of the roof over the living room is too large, a wooden post on a stone block serves as support. In one house such a support assumes the shape of a palm trunk (2.1 m. high), plastered with mud and cut at the top to receive a beam. Staircases in brick rise in straight flights (rise 20 cm., tread 30 cm.) in the entrance hall or around a brick pillar in the rear rooms. They are built in brickwork for the bottom part and above this with steps set on poles fixed at either end in the side walls. A cupboard is often set beneath the steps (fig. 70). Doorsills are in stone or wood as at Lahun, or more often in brick. The door leaf hung on pivot hinges turned on wooden sockets, and its sliding latch could be opened from the street by means of string. The door was secured at night by a heavy bar. Windows could have been set high in the walls of the front hall and bedroom, and as clerestory windows in the living room.

In the original phase of the construction, walls had been decorated with colored panels about 0.2 meters above the floor. Most of these have disappeared, however. Later walls were whitewashed and simple monochrome sketches were painted, especially in the living room. Such fragments as remain show a polychrome scene with a human figure, friezes of lotus, chevrons, a figure of Bes, the popular household genius, or a pilaster painted with a stylized flower stem between chessboard borders (fig. 71).

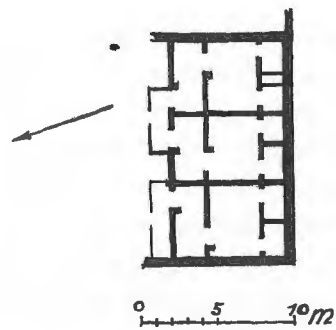
HOUSES AT HAGG QANDIL.¹¹⁷ This is apparently the poorest agglomeration at 'Amarna, southwest of the Central City. The plan of the uniform type of contiguous houses must have been carried out by the government as was the workmen's village. It is also based on a square unit (5.5 x 5.5 m.) for two contiguous houses. Each house has only two sections: a living room and two contiguous rooms at the rear. It is clear that the method of construction used L-shaped thin walls (0.17 m.) which abutted on the rear thick wall, leaving a doorway at the end of the façade. Other houses are somewhat larger (4.7 x 8.2 = 38.5 sq. m.) and are on a tripartite plan, with the addition of a courtyard in front of the house (fig. 72).



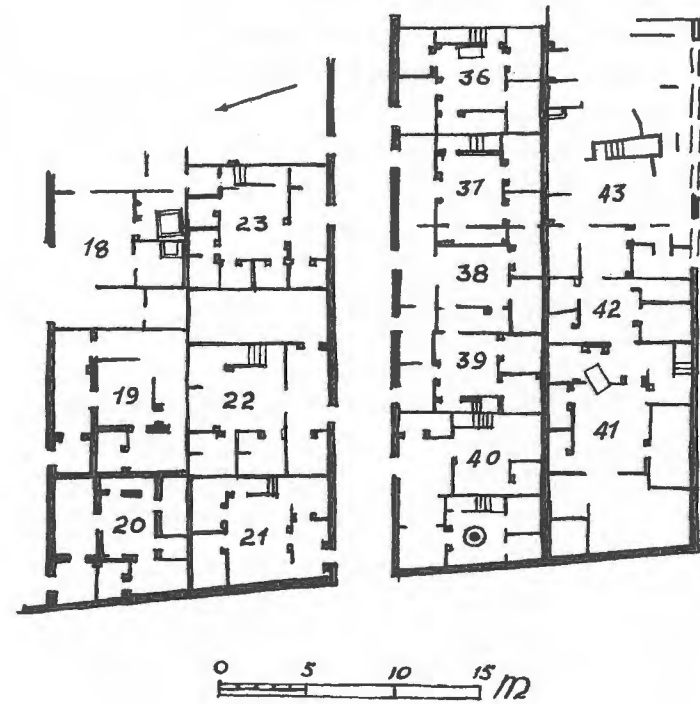
71. Painted pilaster from the workmen's village, No. 9, Main Street.



72. Plan of contiguous houses in the suburb of Hagg Qandil at 'Amarna, o.49.6.



73. Plans of three houses of "priests on duty" in the south corner of the court of the Sanctuary of the Great Temple.



74. Plan of clerks' houses.

THREE PRIESTS' HOUSES IN THE SANCTUARY OF THE GREAT TEMPLE.¹¹⁸ To the south of the court of the sanctuary are three adjacent houses on a uniform plan of the tripartite primary type: front hall, living room, and two rear rooms. The area (4.5 x 7.5 m.) is slightly less than that of the similar house in the Eastern Village. It is noteworthy that an ingenious device of a screen wall in front of the entrance doorway aims at securing privacy (fig. 73).

THE OFFICIALS' QUARTERS.¹¹⁹ To the south of the records office and the "House-of-Life" stretches a quarter consisting of eight rows of contiguous houses on a uniform plan, some set back-to-back, along six E.-W. narrow streets. The plan of the unit is tripartite, but larger and showing more individual features than that in the workmen's village. The area is larger (8.75 x 6 m. or 8 x 8 m.). It has been surmised that these were the quarters of the clerks of the Records Office (fig. 74).

A lobby leads onto a court or front hall, connected to the living room. A closet with lavatory and latrine is occasionally set at one end of the entrance court. The living room is square, usually contains the staircase, and is flanked on one or both sides by one or more narrow rooms. It can also contain two false-doors, a column, and a brick-lined cellarette; it is paved in brick. To the rear are two adjacent rooms. The architect succeeded in introducing certain elements of comfort without disregarding the basic factor of economy.

THE RECORDS OFFICE.¹²⁰ The buildings are more or less aligned along three streets running N.-S. and situated to the east of the King's House. Most of the buildings open West.

THE FOREIGN OFFICE. This is the westernmost block, consisting of five contiguous buildings of the same depth, but varying in width. They have been identified as the Foreign Office, from the famous 'Amarna Letters or cuneiform tablets (which were sent to Egypt from northern Syria as diplomatic correspondence) found therein.

The second block from the north is the best preserved and is entered from the front west façade through a doorway behind a screen wall. This winding entrance device is intended to insure privacy and to help guard the doorway. A waiting hall with two columns and two small rooms at the rear are first encountered from the lobby. Around the next large hall are three long rooms and a set of chambers, perhaps the quarters of some permanent official in charge. Connected to the large hall is a long court flanked with two series of five rooms. The eastern ones are divided into two by transverse walls and the northernmost has a dais around it. An interesting feature is the provision against theft and for guarding the building by means of a double enclosure embodying an ambulatory along the back of the western rooms. A similar provision is featured in the next building where the back wall of two of the rooms was thickened.

The Records Office (Egyptian "House-of-Correspondence-of-Pharaoh") occurs as a separate unit to the south of the series and is bordered by a transverse alley. It is divided into two parts by a N.-S. wall. The east group of rooms, entered from the east, has a central room with a staircase and a room with two ovens. The western four rooms are entered from a western doorway.

THE "HOUSE-OF-LIFE." This seems to have been a combination of school and scriptorium where sacred books were copied by the scribes. The buildings are

to the southeast of the Records Office. One building is surrounded by a passage containing a brick trough. Two houses of the official type known in the North Suburb abut against the northern side of the structure.

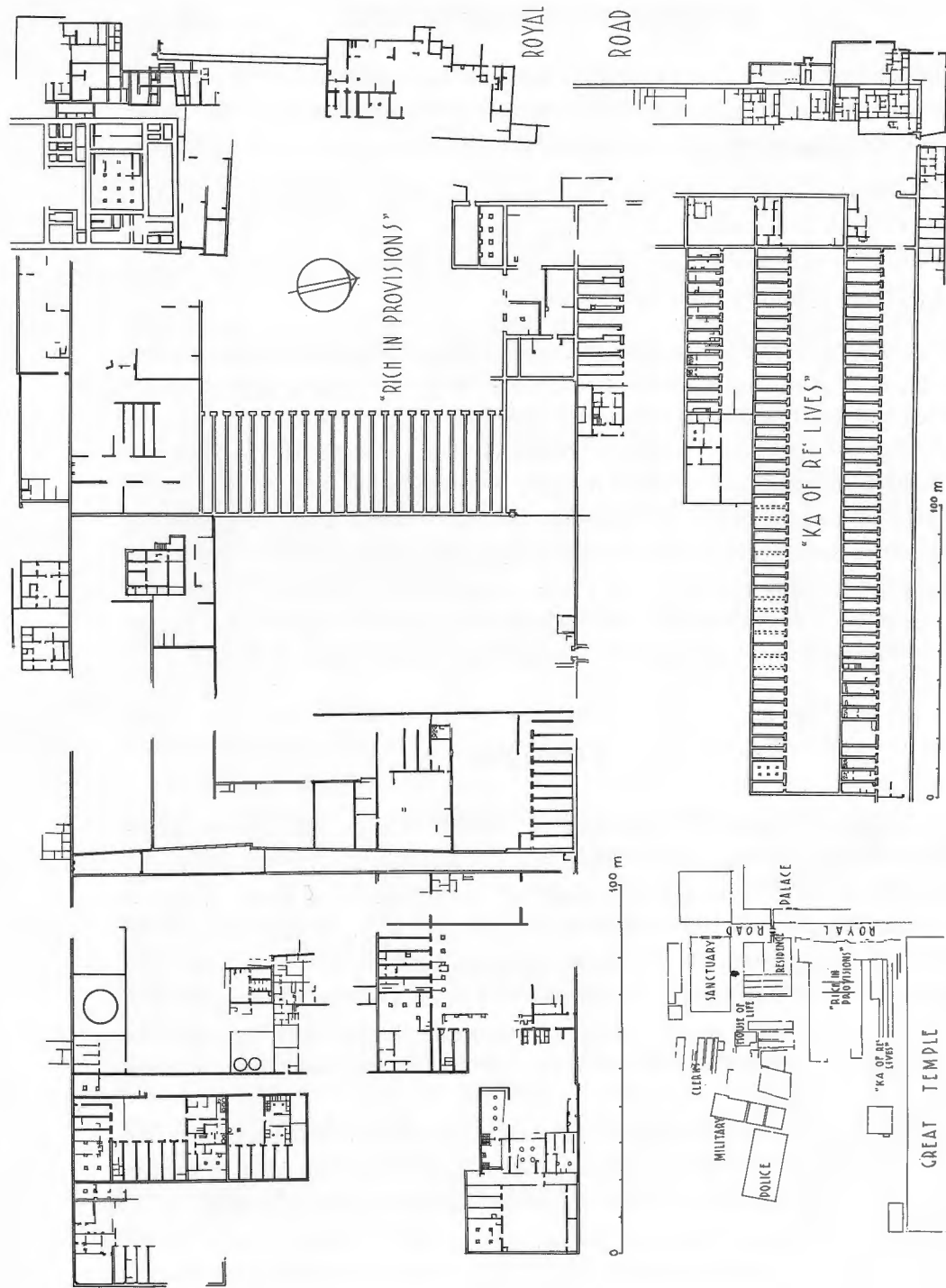
THE CENTRAL BLOCK. A group of buildings containing a large house with two halls (Q.42.2) and a small one (Q.42.6) cover the western area of the block. The eastern group also contains a house and other buildings showing a central hall with one column surrounded by rooms.

THE EASTERN BLOCK. Among some buildings of the ordinary house type are two (42.33; 42.8) featuring a special plan: a hall with one central row of square pillars, set longitudinally or transversely, has two or three rooms at its rear. On both sides of each room is a series of boxes, probably to store papyri. This type of building reminds one of the Chancery of the time of Ramses II as represented by a contemporaneous Egyptian drawing.¹²¹ Other scattered houses are built to the east of these blocks. It seems from the occurrence of a number of small gypsum coins inscribed with a typical text such as "Month X of season Y day Z: gypsum of Akhetaten" that they were specimens submitted for inspection in these offices, which could have been some kind of Office of Works.

THE MAGAZINES

The magazines attached to the state or royal buildings, such as the Royal Palace, the King's House, the Temple, and the Sanctuary, were mostly located behind these buildings and in the neighborhood of the Royal Road. Those of the Great Temple were the most extensive and were built, as were those of the Sanctuary, to the south of the temple enclosure and parallel to its axis. The magazines of the later mortuary temples at Thebes (Ramses II, Ramses III), although quite similar to the 'Amarna ones, differ in that they surround the temple within the rectangular enclosure, a feature probably due to their isolation in the desert.

The general type of magazine reminds one of that represented in the 'Amarna tombs or at Thebes. A long court is flanked by two rows of contiguous deep chambers, the whole being enclosed within a rectangular wall.



75. Layout of the magazines between the King's House and the Great Temple.

THE GREAT TEMPLE MAGAZINES "THE-KA-OF-RE'-LIVES."¹²² About 30 meters south of the temenos wall of the Great Temple and parallel to its axis stretch the 250-meter long magazines (fig. 75). The main body assumes the shape of three rows of attached rooms opening north into three long courts E.-W. A large court N.-S., bordered to the west by some domestic buildings, gave access from the Royal Road to the three magazine courts.

STOREHOUSES "RICH-IN-PROVISIONS" BETWEEN THE TEMPLE MAGAZINES AND THE ROYAL ESTATE.¹²³ There are three blocks separated by transverse walls N.-S. Nothing of the façade on the Royal Road remains.

The western block features a large central court bordered on the eastern side by a row of very deep contiguous storage rooms. Others, heavily built (S.), seem to have been underground cellars (fig. 75).

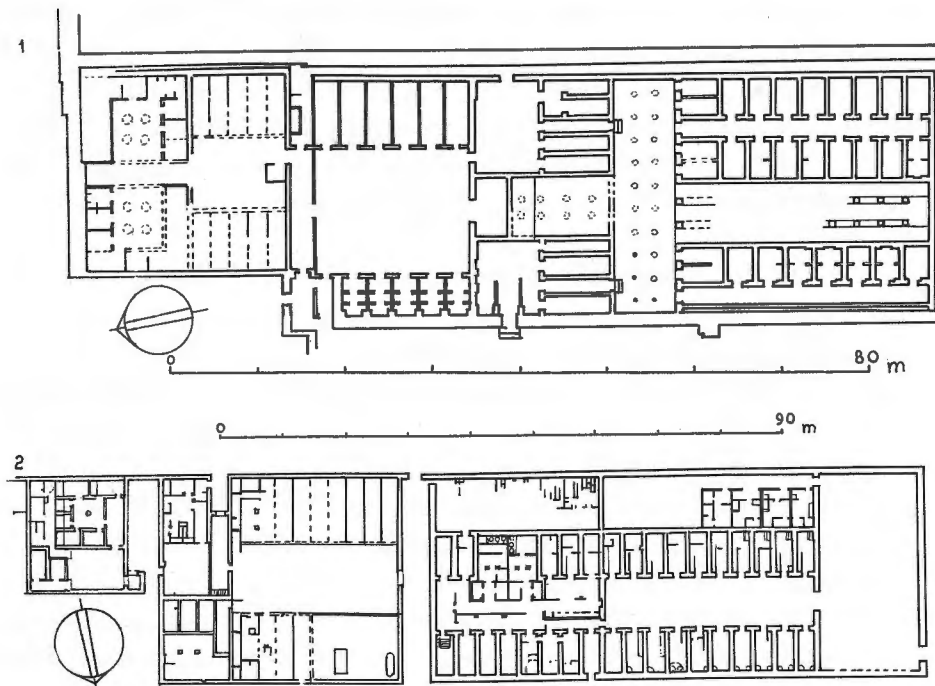
The central block, accessible through an elaborate gateway from the north, consists also of a large court with magazines (N.E.), ovens, paddocks for animals, and a little house on no regular layout.

The eastern block is separated from the central one by a passage and seems to have had two pathways (N.-S. in the S.E. corner) along which stood a row of buildings and several others on no definite plan. The type of building consists of a square court sometimes surrounded by a row of piers and deep rooms (bakery, stalls).

THE MAGAZINES IN THE OFFICIAL PALACE.¹²⁴ Along the Royal Road south of the bridge stretch the three blocks forming the magazines of the palace. The northern one has a plan symmetrical about a N.-S. axis: a passage flanked by two square rooms with four columns each and smaller chambers, and a court with a row of five magazines on each side (fig. 76:1).

The central block seems to have been originally planned symmetrically. A large court is flanked by a row of six magazines to the east and five shortened ones to the west. A central hall with columns seems to be part of the transverse hall of the southern block. On either side a group of four storerooms is laid south of a court with two rows of piers.

The southern block comprises a transverse hall with two rows of wooden columns, connected to a hall (N.-S.) having brick piers. This southern hall is bordered by a group of two eastern series of magazines on both sides of a central corridor and on the west by one row of magazines along a corridor.



76. Magazines of (1) the Great Palace and of (2) the sanctuary and priests' quarters.

Shelves are fixed in the central axis and along the sides of the magazines.

A passage runs between the central block, the southern block, and the enclosure wall to the east and the Coronation Hall to the south.

THE MAGAZINES OF THE ROYAL ESTATE.¹²⁵ These extend to the east of the King's House and its garden. A central alley (E.-W.) between two walls separates the buildings into two groups, quite similar and on the same plan, although the northern one stretches farther. A central court is flanked to the east and the west by a row of very deep storerooms, some with brick supports for shelves (E.) and others with a screen wall behind the doorway (W.). The last compartment to the south contains a staircase ascending to the roof. An ambulatory runs along the west side of the north group. Trees were planted in the northern court and there seems to have been a pond (?) or a well.

The comparison of this building with the drawing from the tomb of Meryre' (see fig. 14) reveals a strong general similarity.

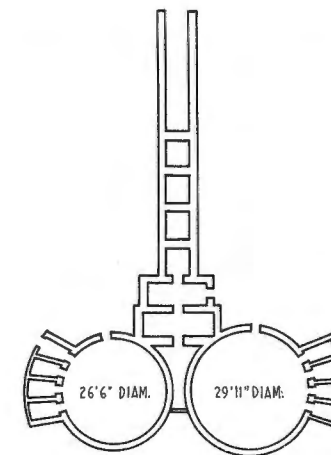
THE MAGAZINES OF THE SANCTUARY.¹²⁶ The buildings to the south of the sanctuary are entered directly from the Royal Road and consist of a court connected with an E.-W. passage bordered by storerooms, each with an oven in the rear. To the south a series of contiguous houses of the workmen's village type open on an alley and probably formed the priests' quarters (fig. 76:2).

Another separate block to the east has a central court bordered with storerooms. Houses for the priests adjoin it to the east. These magazines were "The (-Storehouse)-of-the-Service-of-the-Aten."

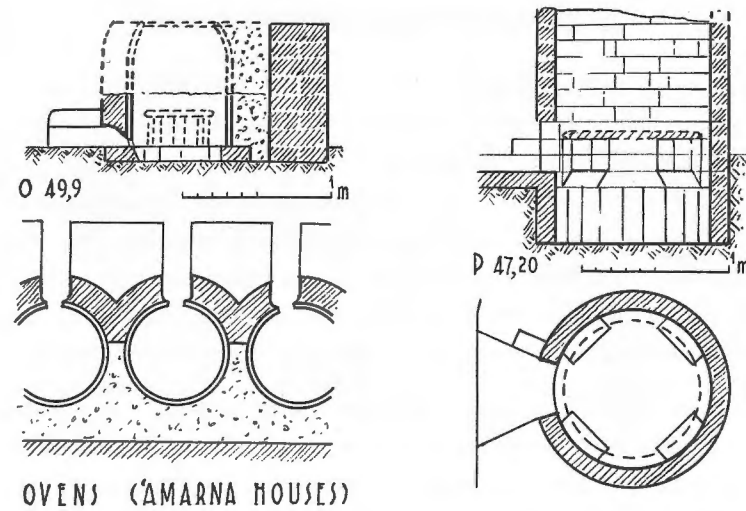
THE MAGAZINES OF THE MILITARY AND POLICE QUARTERS.¹²⁷ An independent block surrounded by an irregular enclosure stands to the west of the military quarters. A central square courtyard is connected to the west with a large court. On the north of the smaller one a hall with pillars is flanked by storerooms of the usual type. To the south a large pillared room, probably a barn, is bordered on its rear by magazines.

PAIRED SILOS (SOUTH OF THE CITY).¹²⁸ Two large silos on a circular plan (26 ft. 6 in. [8.07 m.] and 29 ft. 11 in. [9.18 m.] diam.) were found to the south of the city (fig. 77). They are paired and a long ramp approaches them from the north, rising approximately to 25 feet (7.62 m.) on a length of 100 feet (30.48 m.). Petrie calculated that they could have stored an amount of grain (about 20 ft. [6.1 m.] high) sufficient for 3,000 to 4,000 people, equivalent to the whole city's requirement for one year.

77. Plan of paired silos at 'Amarna.

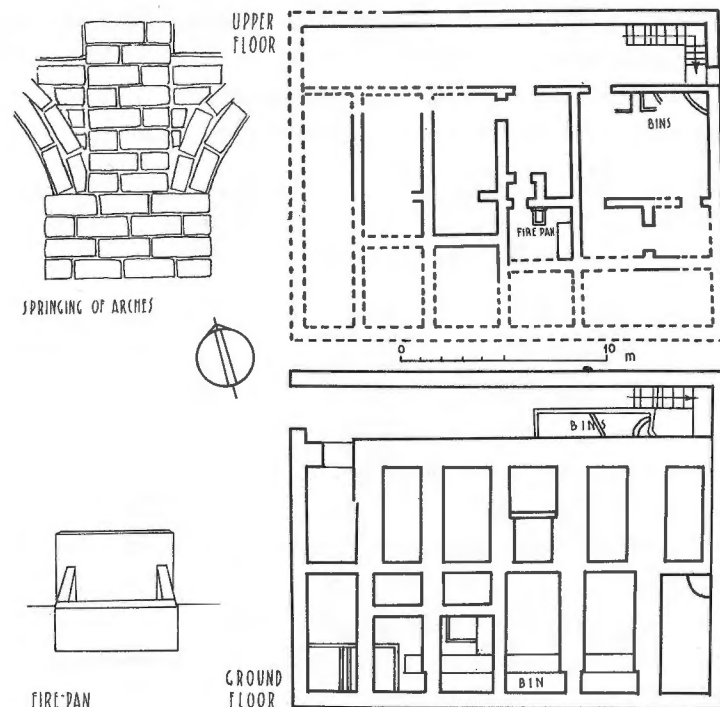


Ovens



78. Plans and sections of ovens in houses at 'Amarna.

79. Plans of the ground floor and upper floor in house No. 1 in the fortress at Kuban, and details of springing of arches and fire pan.



In two of the houses (O 49, 9; P 47, 20)¹²⁹ remains of ovens set in series in the court were found (fig. 78). The basic element is a cylinder partly sunk in the ground and open at the top. A brushwood fire was lit at the bottom from a relatively small round opening and the loaves to be baked were set on a clay disk fixed at some height above. Care was taken to insulate the cylinder. In one oven the insulation consists of brickwork rings (1.05 m. diam.), half a brick thick with four bricks protruding on the inside as brackets to support the disk. In the other oven there is an inner cylinder of clay (0.65 m. diam.), slightly curved inward at the top, coated on the front side with a thick layer of mud, and surrounded to the rear by a filling and a brick wall. The inner cylinder was formed in situ from clay and was partly baked through usage. This type of clay oven is still used today in Upper Egypt where women build and work it.

*The Military and Police Quarters*¹³⁰

To the southeast of the Central City are two large blocks on a rectangular plan, laid out at right angles to each other. These are presumably the military and police quarters, to which a third block of magazines is appended (see p. 123).

The military quarters (N.-S.) consist of four units set side by side and separated by transverse passages. It seems that each unit features basically a court, a large pillared hall, and a series of contiguous deep rooms, probably magazines. The southernmost unit is planned symmetrically and features a small lobby connected to an ambulatory running around the whole building, presumably for guards. An open court flanked by two others, paved with brick, precedes the large hall, with two rows of columns bordering the central aisle and three rows of five piers each on either side. The plan suggests that of a basilica. The rear part of this building is a sunken court bordered with a portico on pillars and flanked on both sides by a row of contiguous deep rooms.

The police barracks, identified as such on account of the extensive accommodation for horses, is on a rectangular plan (E.-W.). The entrance leads into a large central court, surrounded by mangers and tethering stones with a row of deep contiguous stables on the east and a secondary court with two

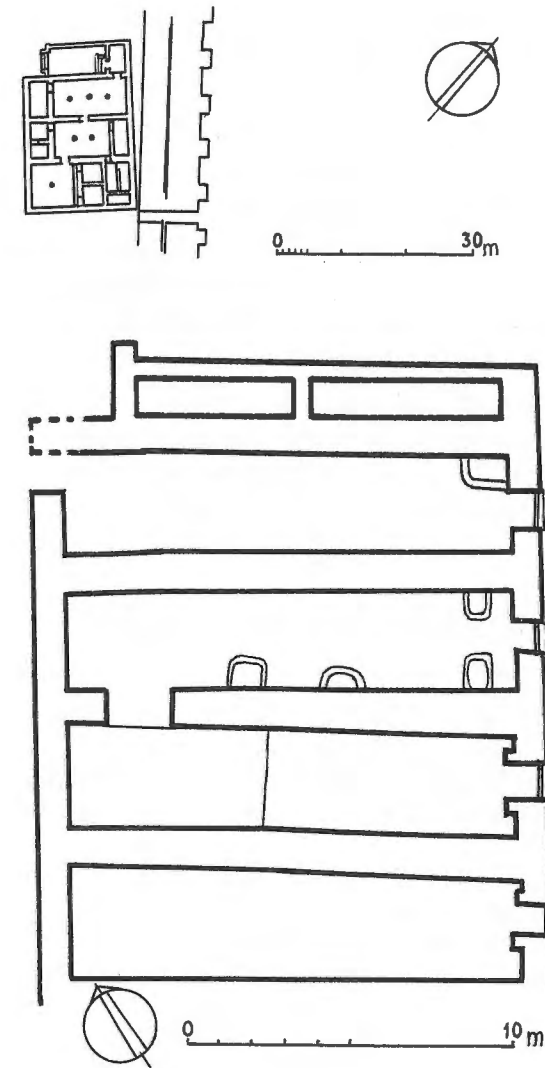
series of deep paved rooms, "the dormitories." A small house of the usual villa type and stores occupy a corner of the section.

HOUSE IN THE FORTRESS OF KUBAN (NUBIA).¹³¹ The outer walls of a building from the Middle Kingdom in the northeast corner of the fortress were used for this house (No. 1), but the interior was altered, transforming the ground floor into granaries (fig. 79). A corridor runs along the north side and ends in a stairway leading up to the first floor. A small room near the entrance doorway on the west side was perhaps used as a guardroom. No doorways, except one in the latter room, are to be seen in the ground floor. The rooms, in two series along the longitudinal axis, are covered with brick vaults and were probably used as granaries and entered from trap doors in the ceiling. Bin compartments coated with white plaster were built in some of the granaries. The first floor had a passage from which opened five contiguous rooms, each divided by transverse walls into two or more. The stairs are blocks of stone set on a brick foundation. There is an instance of a small lobby that separates the two sections of one room and which is accompanied by an adjacent bin, an ingenious planning device still in favor in modern design.

HOUSE IN THE FORTIFIED TOWN OF MI'M ('ANIBA IN NUBIA).¹³² Certain data allow for the surmise that an area of the town of Mi'm was built up with small houses (ca. 50-100 sq. m.) similar to those in the North Suburb of 'Amarna. Remains of larger houses, quite similar to those at 'Amarna, were also found. One complete plan could be restored. It resembles villa Q.46.1 at 'Amarna, is rectangular (25 x 17 = 425 sq. m.), and oriented N.W.-S.E. It presents the familiar features of a north porch, a north broad hall with three columns, and a central hall with two columns flanked by lateral chambers. The rear part of the plan consists of a square hall with one column and adjacent rooms (fig. 80, upper plan).

A few stone doorjambs are inscribed with various interesting greetings and wishes for the welfare of the inhabitants and their visitors, similar to those on 'Amarna houses: "May Amun-Re', Lord of the Thrones of the Two Lands, give life, prosperity, health, joy, favor and love . . ."; "Mayest thou enter into this house, being healthy. May he live the one who remains. . . ."

MAGAZINES.¹³² Outside the town of Mi'm stretches a group of contiguous buildings, probably magazines from the time of Thutmose III. They consist of



80. Plans of a large mansion (upper figure) in the town of Mi'm and magazines outside the town.

deep rooms (13.7 x 3 m.), directed E.-W., with thick brick walls (1.95-1.1 m.) and entered through a central doorway (0.7 m. wide) with an inscribed doorframe in stone. The structure was probably roofed over with vaults and paved with mud, sandstone slabs, or brick.

THE GRANARIES AND MAGAZINES

No practical information can be derived from the texts, which mention emphatically that the granaries, magazines, and storehouses are well supplied. Ramses III says to Min, the god of cosmic fertility: "I bring to thee the tribute of every land, in order to flood thy treasury and thy storehouse. . . . I multiply for thee wheat in heaps, thy granary approaches heaven."¹³⁴ The same pharaoh is said to be busy, ". . . making for him [Amun] a very great granary, whose grain-heaps approach heaven."¹³⁵

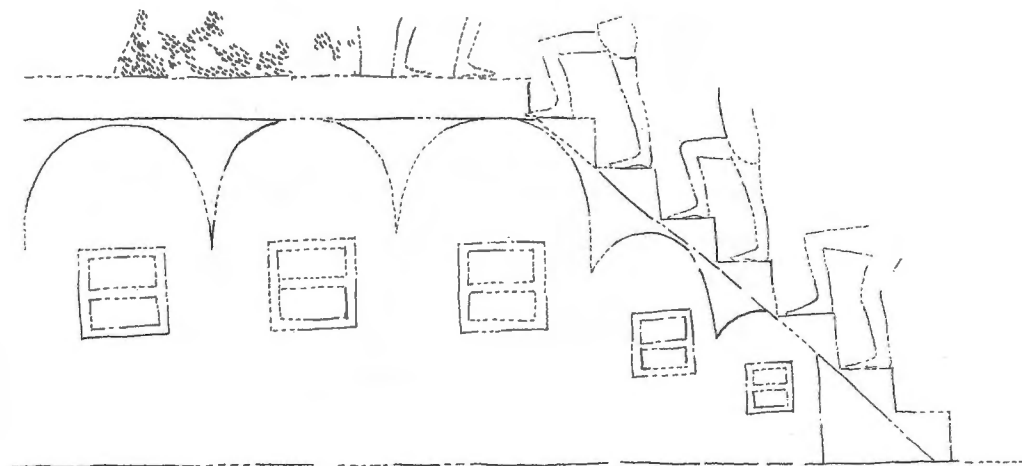
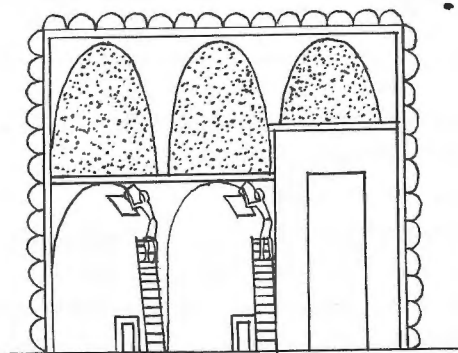
It is happy that this inchoate information is complemented by that derived from the paintings in the tombs, the more so since few traces of such structures built in brick or even in mud or stalks have withstood erosion during scores of centuries.

REPRESENTATIONAL EVIDENCE

*The Granaries*¹³⁶

The two types known to have existed in the Middle Kingdom are still used in the New Kingdom: the silo as an independent unit and the series of silos.

81. Representation of a court with silos from the tomb of Pehsukher.

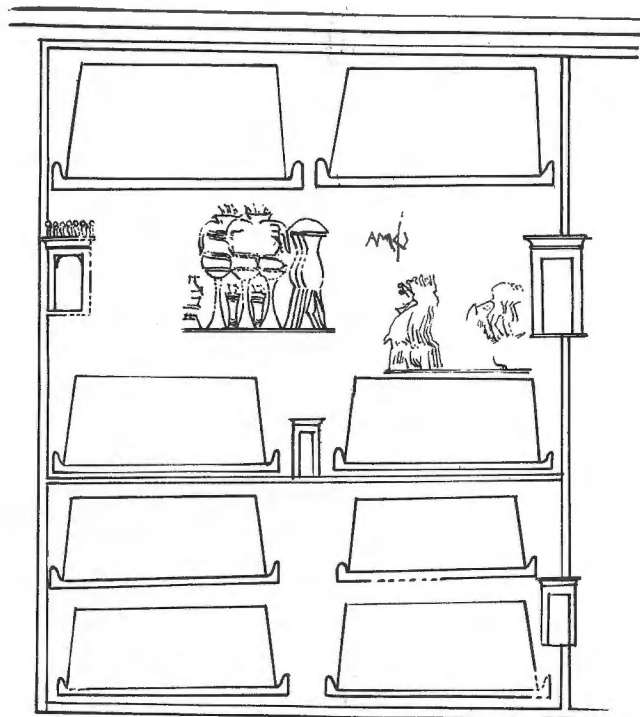


82. Adjacent silos surmounted by a platform.

1. The independent silo probably in mud or brickwork, is commonly used and occurs in groups of two to five, arranged in a square courtyard with scalloped crestring. Such is the aspect of the court in Pehsukher's tomb (Thutmose III; fig. 81), where two servants at the top of two ladders are pouring grain through the upper aperture of two huge silos. A smaller silo is represented in the tomb of Nebamun, and servants walk up a few steps in rammed earth or brickwork to fill in grain through a squared door at mid-height. A wooden frame usually surrounds the aperture. From the size of the figures, although this is by no means a precise unit of comparison in Egyptian drawings, it can be deduced that the silos could reach 1.5-2.5 meters in diameter and 3-5 meters in height. At 'Amarna the diameters of the silos range from 2.5 to 8 meters (8.9 m. at Medinet Habu). The two silos in the land house of Ineny could well have been of such a large size.

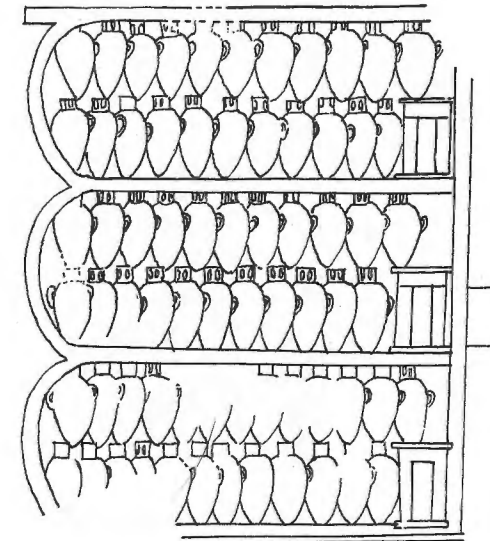
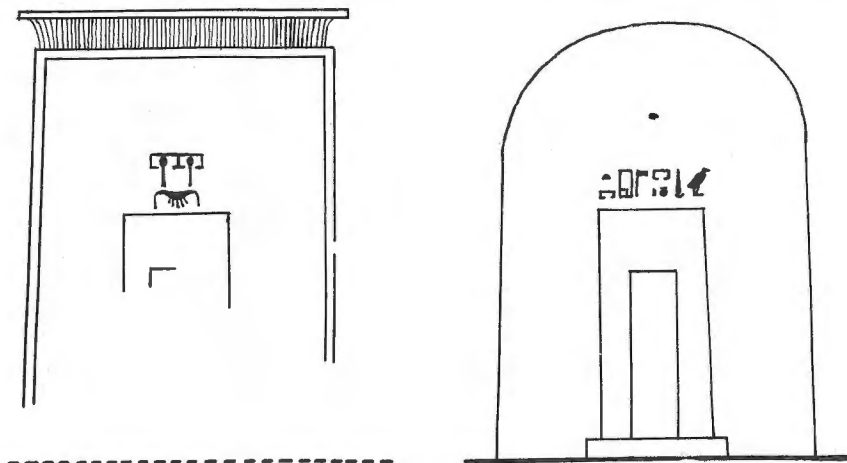
2. Series of adjacent silos, covered with a terrace, a type known from the Middle Kingdom, are still in use. A stairway, probably on a wooden frame, ascends from one end and the square apertures open at mid-height (fig. 82).

In such large estates as those that depended from the treasury, grain was piled up on threshing floors of mud bordered by a rim and set in the courtyards. Such is the case in the granaries at 'Amarna, where two courts enclosed within walls and accessible through corniced doorways contain no fewer than eight such heaps (fig. 83).



83. Heaps of grain on a circular platform within copings.

84. Typical façades of storerooms in the temple of Amun from the tomb of Rekmire'.



85. Plan of three adjacent magazines from the tomb of Amenmose.

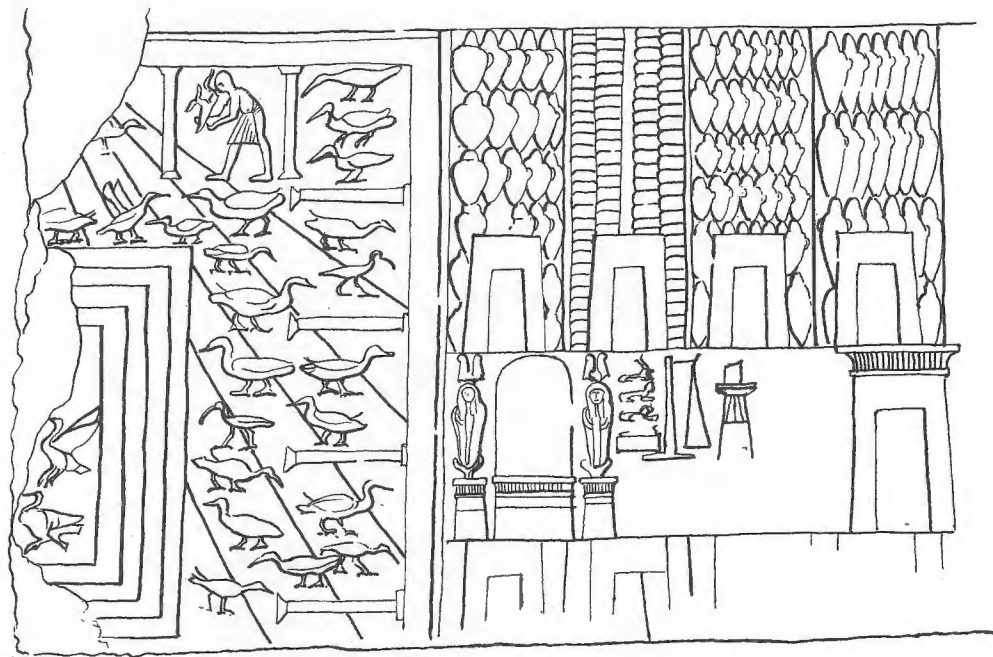
*The Magazines*¹³⁷

In the large estates, royal, private, or depending from the temples, the valuable goods are stored in magazines. Those of the pharaohs and the temples are said to be well provided with prisoners of war.

THE MAGAZINES OF THE TEMPLE OF AMUN (FROM THE TOMB OF REKHMIRE'). Series of separate façades of two types, with corniced top and torus molding or with flat vault and a central doorway, are set side by side. The inscription above the door of each gives the name "Double-House-of-Silver" or "Magazines-of-the-Temple." They must have represented the narrow façades, perhaps in stone, of deep rectangular storage rooms (fig. 84).

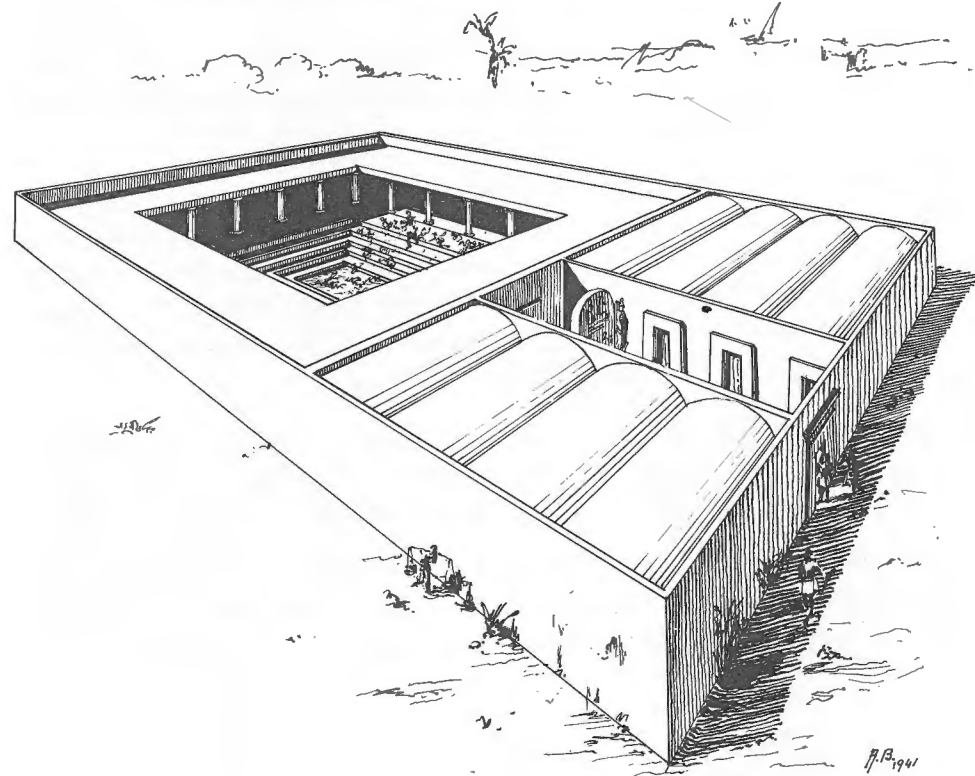
MAGAZINES OF AMENMOSE. This interesting drawing gives the plan of three rectangular adjacent rooms, each with its door rabatted in one corner and its flat vault represented in section at the other end (fig. 85).

MAGAZINES AND POULTRY YARD (STELA 5412, FLORENCE MUSEUM). Although less than half the scene from this stela of the reign of Amenhotep IV remains, there is still sufficient evidence for a fairly sure restoration. On either side of a



86. Plan of magazines and poultry yard represented on Stela 5412 (Florence Museum).

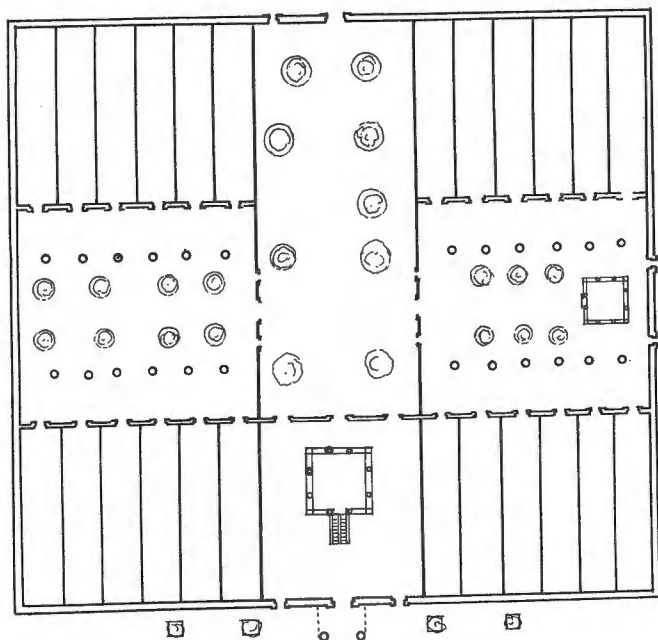
87. Restored bird's-eye view of the magazines and poultry yard.



88. Sectional view of two gabled sheds from the tomb of Horemheb.

central court, with an entrance doorway at one end and a stela flanked by two statues of Renenut, the serpent goddess of harvest, at the other end, are four doors that open onto contiguous magazines, probably vaulted (figs. 86, 87). In the court next to it a central basin with stepped sides shown in plan is surrounded by a portico on columns, shown rabatted. This court is a form evolved from the simple poultry yard already represented in the tombs of the Old Kingdom (Ti at Saqqara).¹³⁸

SHED (HOREMHEB). Two sheds roofed over with a gable upon a central row of columns and accessible through a side door contain pottery and pieces of furniture (fig. 88). The structural principle of the gable, here possibly treated as a wooden truss, was well known from archaic architecture and was extensively used in the stone pent roof of the inner apartments in the pyramids and tombs of the Old and Middle kingdoms.



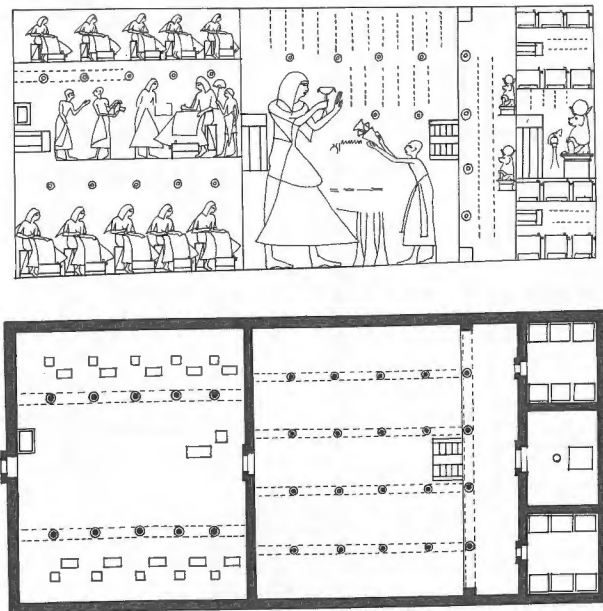
89. Suggested plan of the magazines of the temple of the Aten at 'Amarna, from the representations.

MAGAZINES OF THE TEMPLE OF ATEN ('AMARNA). A large squarish enclosure, accessible on one side through three doorways, contains a group of six long, narrow, contiguous rooms set in each of the four corners. Along the two central axes are four courtyards. Just behind the entrance is a kiosk, and in each of the side courts two porticoes on bundle columns front the façades of the two magazines. The drawing is a plan showing rabatted doors, façades of kiosks, trees, and stored goods (fig. 89).

MAGAZINES OF THE TEMPLE AT KARNAK (TOMB OF NEFERHOTEP). The plan represents a court with officials, scribes, and caskets for papyri and a second court with the magazines. A transverse corridor separates both sections and achieves the same security purpose as the ambulatory running along the front of the harem buildings or at the back of temples. A peculiarity of the draftsmanship is the representation of partition walls between the adjacent rooms and the roof in section by means of two parallel lines. Could these be interpreted as representing double walls enclosing a filling as a precaution against robbers (fig. 90)?



90. Plan of the magazines of the temple of Amun at Karnak, from the tomb of Nefertotep.

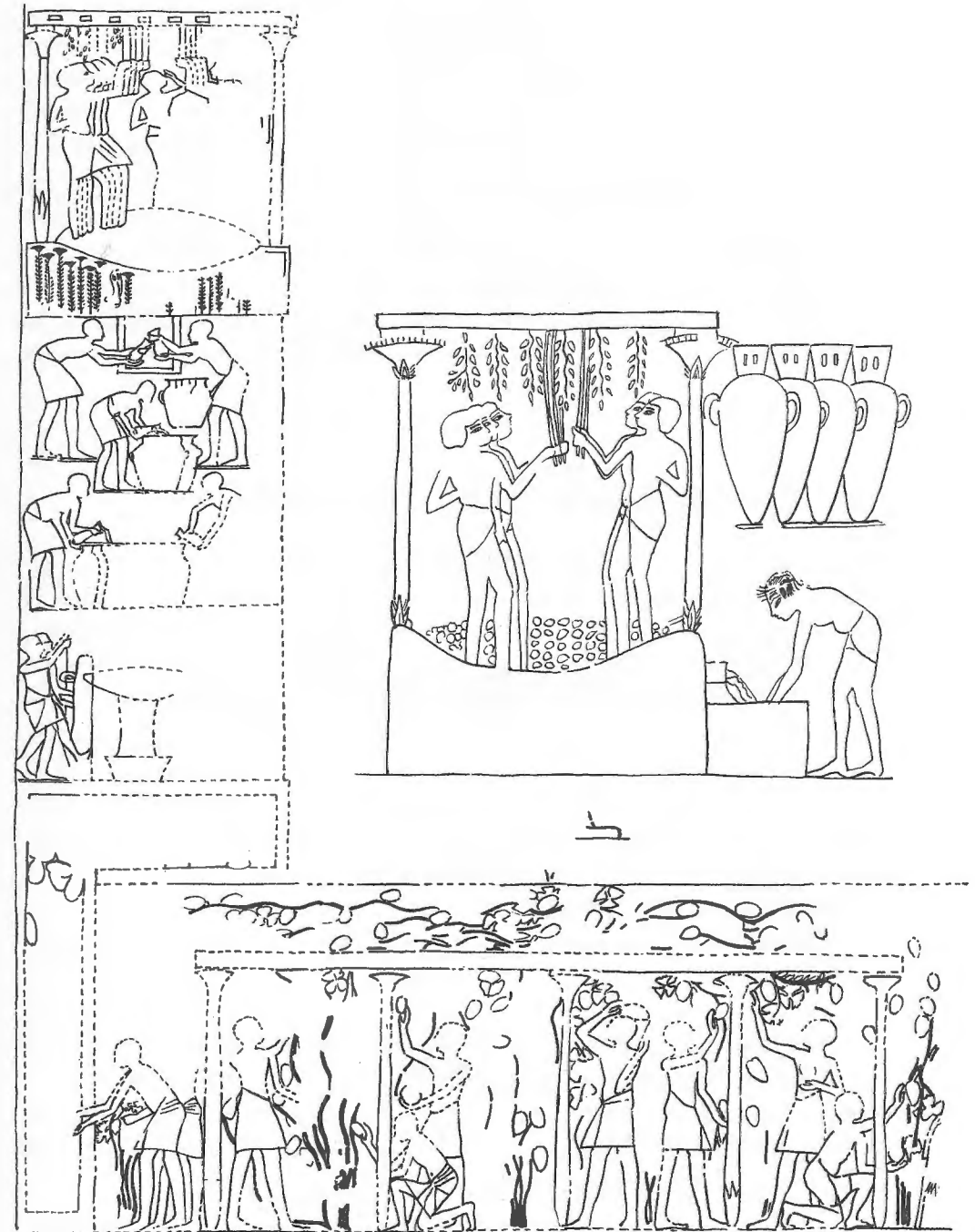


91. Plan of the chancery office under Ramses II, from the tomb of Tjoy and its interpretation.

THE CHANCERY OFFICE UNDER RAMSES II (TOMB OF TJOY). This scene represents the columns in section for the shaft and in plan for the base, an extremely rare instance quite similar to modern projection. The plan is a long rectangle divided transversely into three sections, the rear one being the smallest. The first one is a courtyard bordered on either side by a columned portico under which are set the desks and seats of ten officials. A water basin for ablutions is shown to the left of the entrance door (fig. 91). The second part is a large hypostyle hall with sixteen columns and a raised portico at the back. Three contiguous rooms open off the hall, the central one being a shrine to the ape god Thot, patron of learning, while the two lateral ones contain the caskets for the archives.

Wine Presses

In vintage scenes from tombs a representation of the wine press is usually included. In Parennefer's estate vines grow on a pergola, an attractive garden feature with slender open papyriform columns. The grapes are gathered and stored in a large L-shaped trough (fig. 92). Nearby is the wine press itself,



92. Murals representing Nakht's wine press and Parennefer's wine press and vine.

consisting of a basin on a quadrangular plan under a baldachino with four open papyriform columns. The top of each side of the basin seems to be curved and to rise at both ends, although this peculiarity has been tentatively interpreted as an attempt at showing in perspective the circular shape of the pile of grapes.¹³⁹ The grapes are trodden under foot by two groups of workmen facing each other and keeping their equilibrium by holding fast to the ropes hanging from the roof. In the middle a singer, holding his left hand on his ear, chants some merry vintage song. A collecting basin abuts on one side of the structure and is represented on a square plan. Juice pouring from a vent in it is collected and stored in large earthenware vessels, while the trodden mass is submitted at another end of the vineyard to a second pressing in a bag twisted by hand spikes.

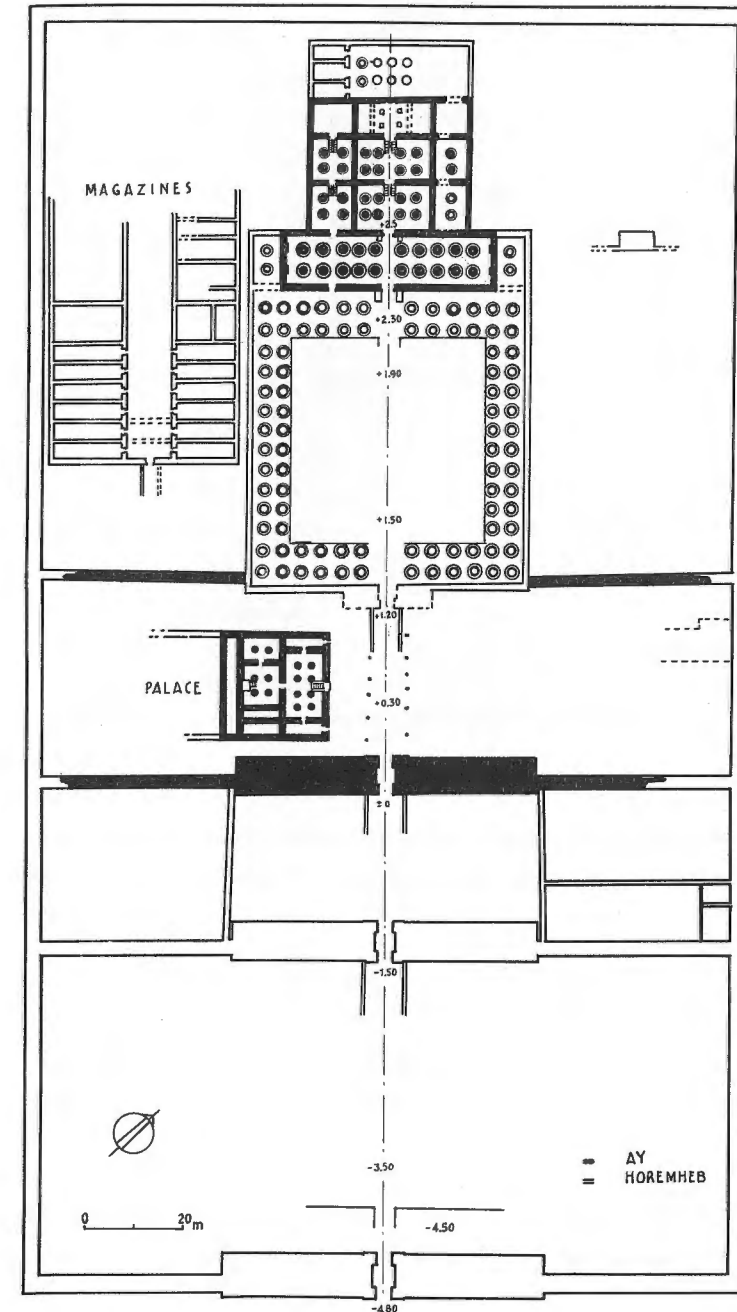
EXAMPLES OF MAGAZINES, SILOS, AND OVENS

Every temple had its own dependencies, which consisted of extensive magazines and storehouses as well as granaries, laid out within areas surrounded by enclosure walls. Such remains have been excavated in practically every temple and they corroborate the information derived from the study of contemporaneous representations. The type of granary in such public dependencies is on a rectangular plan, usually set on either side of a courtyard and probably roofed over with vaults.

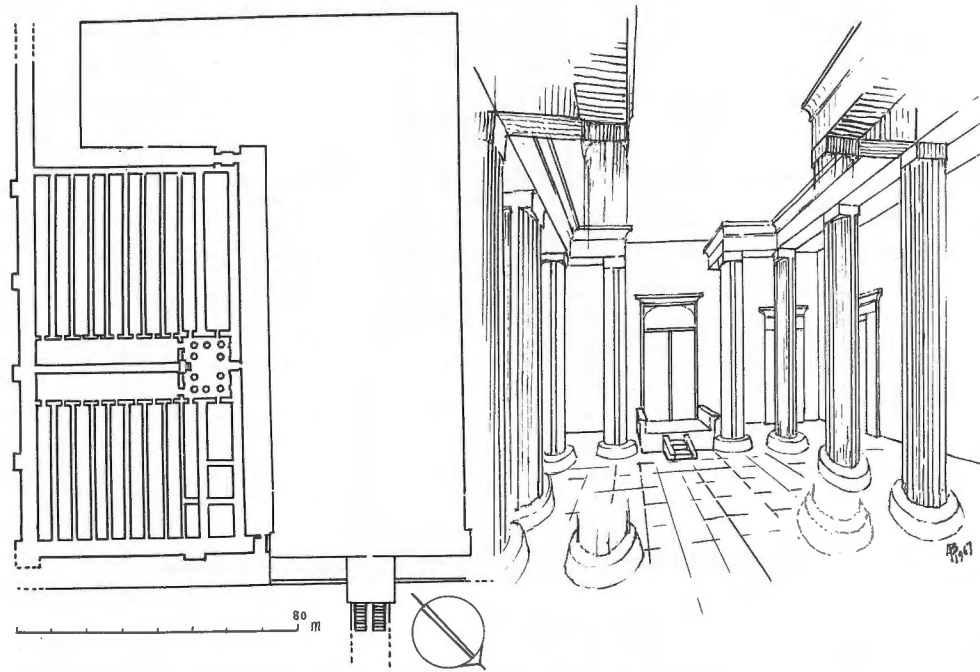
In private estates remains of granaries and other dependencies are also found and the evidence from 'Amarna and Medinet Habu proves that the type of granary in favor was the silo, built either as an independent unit or set in pairs with winding stairways rising between both structures.

The material commonly used is brick, probably plastered and white-washed.

MAGAZINES IN THE TEMPLE OF AY-HOREMHEB (MEDINET HABU).¹⁴⁰ Adjoining the temple of Horemheb are magazines that contained jars. The plan is of the regular type: a central pathway (8.7 m. wide) runs parallel to the temple and is flanked by two rows of deep, narrow rooms (3.15 m. [6 cubits] wide), built in brick and probably vaulted (fig. 93).



93. Plan of the temple and the temple palace of Ay, with additions by Horemheb at Medinet Habu.



94. Plan of some magazines of the temple of Seti I at Abydos and restored perspective of the court.

MAGAZINES IN THE TEMPLE OF SETI I AT ABYDOS.¹⁴¹ Recent excavation of the area adjacent to the southeast of the temple of Seti I uncovered a terrace fronting the first pylon, and the southeast corner of the girdle wall (5 m. thick) in brick (40 x 20 x 15 cm.) strengthened with buttresses (section 4.7 x 2.15 m.). This wall starts from the small end of the first pylon, proceeds on the same alignment, then turns at right angles southwest (fig. 94). It encloses a group (103 x 60 m.) of magazines very similar to the one in the longitudinal axis, behind the mortuary temple of Ramses II (Ramesseum). It consists of two series of long narrow vaulted contiguous rooms (37.5 x 3.50 m.), each accessible from a passage (39 x 6.6 m. east; 39 x 6.8 m. west) starting from the rear of a peristyle court (13.5 x 16 m.) with 10 limestone columns just behind the only entrance to the complex. On either side of the court is a room similar to those of the magazines adjacent to another twice its width (6 m.).

This plan differs from that of the Ramesseum in having a court paved with brick (44 x 44 x 16 cm.) instead of a columned vestibule, and two parallel

passages instead of one. Against the middle of the rear wall of the court there is a limestone dais (3.28 m. broad, 1.63 m. deep, 0.41 m. high) accessible from two steps with lateral walls topped with a cavetto cornice. A recess in the middle of the rear wall may have contained a false-door, an arrangement typical for a shrine or a throne dais. The column (ca. 5 m. high) is a 24-sided shaft built in four drums on a base topped with an abacus. Four of the faces at right angles are double the width of the others and are inscribed with propitiatory epithets of Seti I. The abacus (98 x 98 x 45 cm.) was inscribed with the cartouches. As the span between the columns on either side of the axis is 3 meters instead of the regular intercolumniation of 1.9 meters, it may have been that the portico was interrupted to clear the entrance doorway and the dais, a solution typical for the larger peristyle courts in the temples (cf. Luxor). The brick walls were plastered and painted with brilliant colors, as were the inscribed doorways of limestone and the transom windows above their lintels and cornices. The window was a monolithic block of limestone cut as an openwork grating (bar 43.5 cm. high, 7 cm. wide, 18 cm. deep).

The passages were painted with elaborate geometric patterns in color framed within vertical inscriptions above a dado of *djed* signs in whitewash. The walls were of the same brickwork as the girdle wall, but the laminated vaults were of a special curved type (60 x 22 x 7.5 cm.).

The remaining area within the girdle wall behind the temple and on its north side must have featured other magazines as was the case in the mortuary temples of Ramses II and Ramses III in Western Thebes. The identification of the present complex as a temple palace on a false analogy with the typical one in the mortuary temples cannot be defended.

THE MAGAZINES OF THE RAMESSEUM.¹⁴² These magazines are famous on account of their extensive area (about thrice that of the temple) and their fair state of preservation. They extend between the temple and the large rectangular enclosure, and are accessible from a street around the temple which opens in the front side of the enclosure wall, north of the pylon.

Three groups of magazines can be differentiated. The one to the north of the temple consists of two separate enclosures, contemporaneous and adjacent. A central pathway 6.5 meters wide, covered in one case (N.-S.), is flanked by two series of contiguous rooms (3.2 m. wide, 3.5 m. high), roofed over with parabolic vaults. One stairway rises in the west magazine to the common

terrace, while the other magazine has two opposite stairways (fig. 95).

To the south of the temple two smaller magazines are of one single type: a square vestibule in stone, roofed over with a wooden ceiling, is flanked by two courts and opens into a central corridor bordered by two series of contiguous rooms. The floor is of stone slabs.

To the west, at the back of the temple, are two large and one smaller set of magazines. The one in the axis of the temple is the most impressive, having a square, columned vestibule with corresponding pilasters which is connected to a central corridor flanked by two series of deep rooms (3.7 m. wide, 3.8 m. high). Apertures probably framed with stone and covered are set every 6 meters along the crown of the vaults to allow for filling. The large magazine to the northwest consists of a row of very deep rooms (3.7 m. wide, 4.5 m. high), faced with a portico on columns. Apertures are provided every 6.3 meters in the crown of the vaults for charging the magazines. At the rear end of this portico a dais was set, perhaps for an official or a shrine. In the middle of the row is a large hall with two series of columns and corresponding pilasters probably roofed over with three parallel vaults on stone architraves.

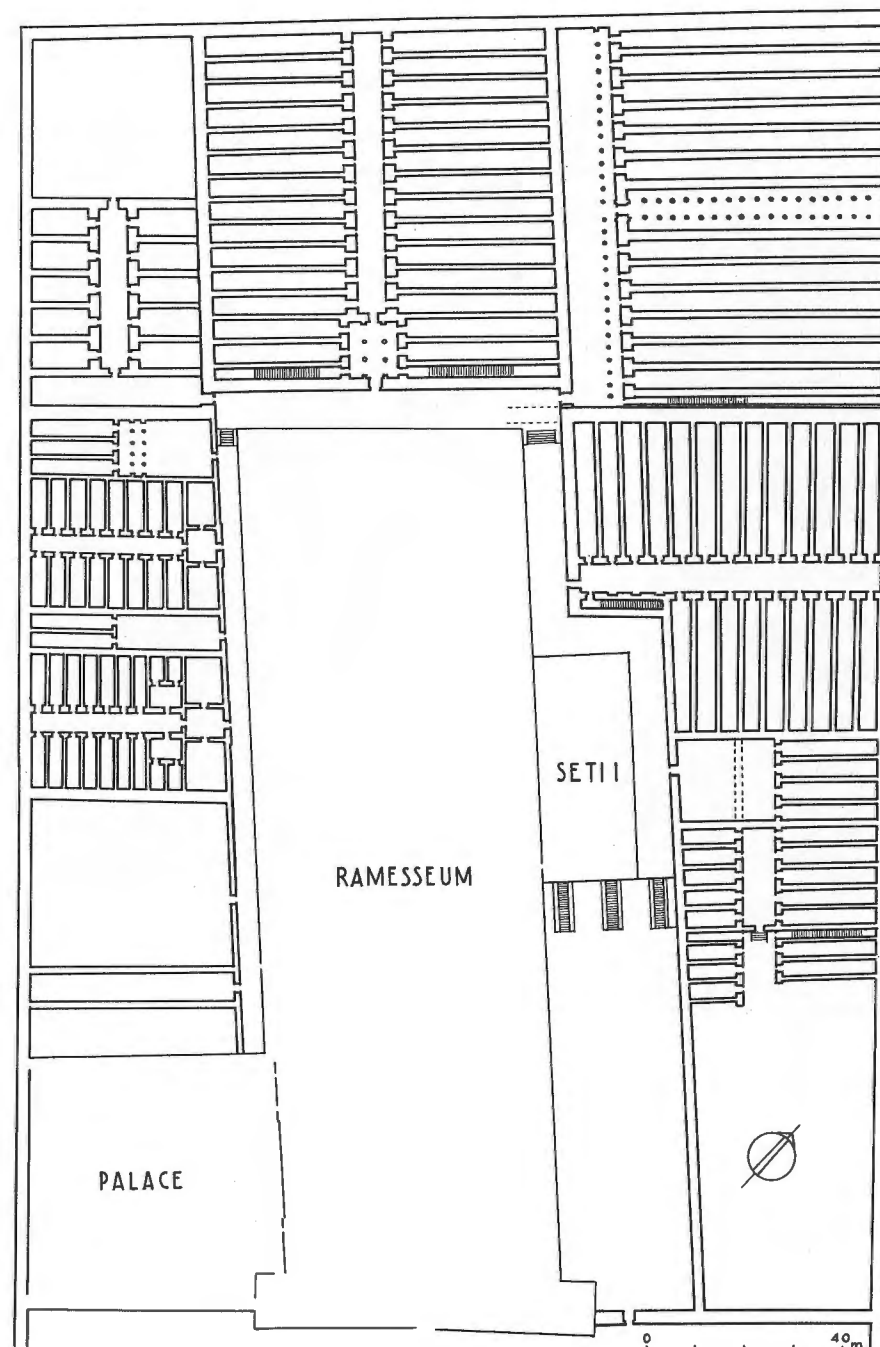
Certain characteristics are common to all these structures: they are built of brick, thinner for the vaults (34 x 17 x 5 cm.) than for the walls (38 x 18 x 11 cm.), with rough grooves to afford a grip (pl. 7). Doorframes, as well as sills, are of stone. Floors are of stone or square brick slabs (40 cm.).

It is noteworthy that symmetry plays an important role in the layout. Thus, in the magazine to the north it was even thought necessary to cut niches corresponding to the series of doorways in the side wall of the stairway. Such a strict observance of symmetry was usual in the sophisticated villas at 'Amarna.

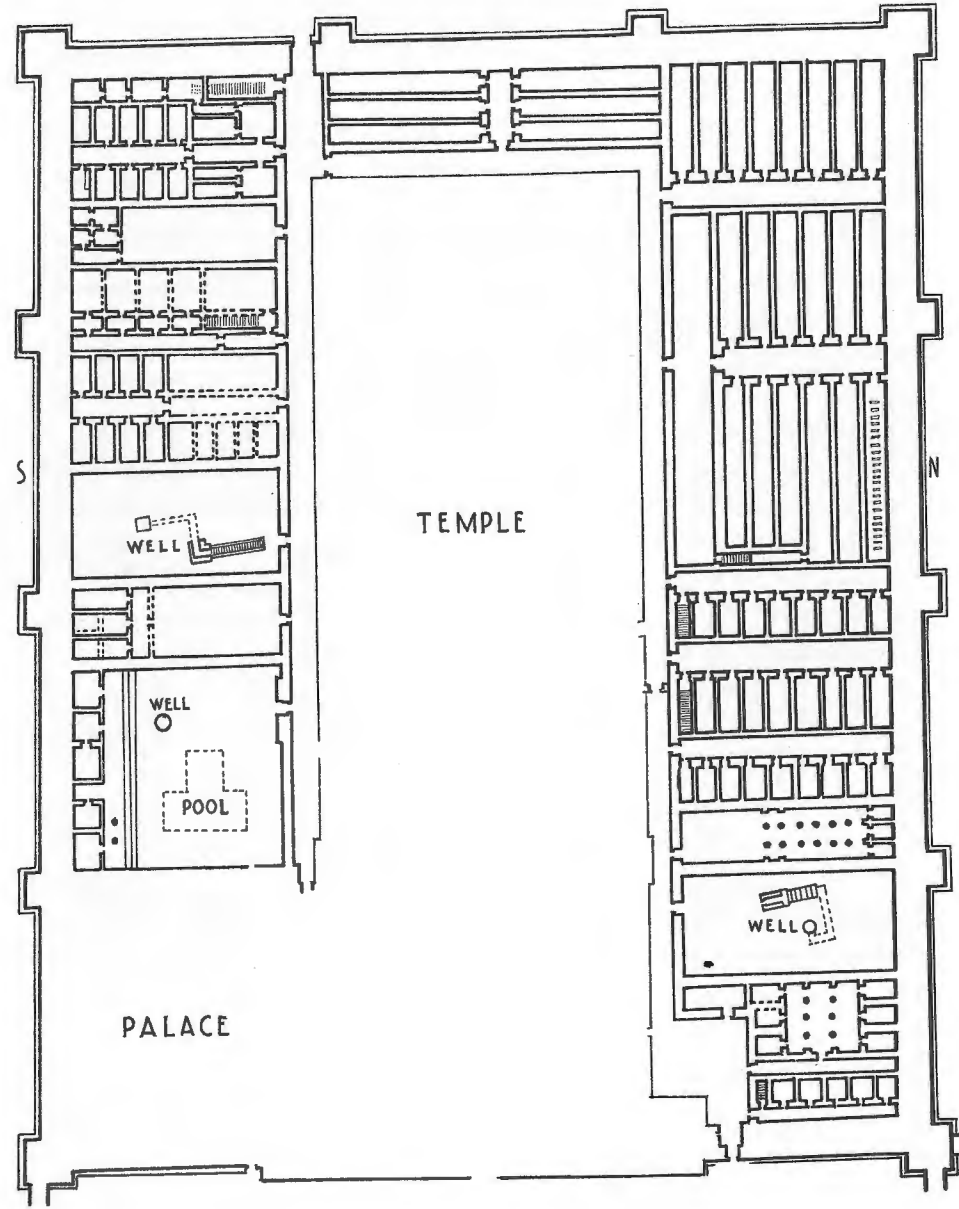
The correspondence of this archaeological evidence with the graphical evidence speaks for the efficacy of Egyptian methods of graphical representation, so often disparaged by modern commentators.

ADMINISTRATION BUILDINGS, MAGAZINES, WELLS (MORTUARY TEMPLE OF RAMSES III AT MEDINET HABU).¹⁴³ The temple is the central item in the general layout of the inner complex, enclosed within a strictly symmetrical wall on a rectangular plan (136 x 171 m.), with protruding towers, much like a fortified structure.

As in the Ramesseum a street, 3-3.5 meters wide, paved with stone surrounds the three sides of the temple and isolates it from its dependencies



95. Plan of the magazines of the Ramesseum.



96. Plan of the dependencies around the temple of Ramses III at Medinet Habu.



Plate 7. Magazines of the Ramesseum.

(fig. 96). This street was accessible through a gateway north of the pylon and a second one in the rear side of the enclosure. These dependencies feature various groups of buildings which cover the area between the ambulatory and the enclosure. Just beyond the front entrance a group named "Administration Buildings" consists of a columned hall flanked on both sides by three rooms and separated by a long transverse passage from the back of a row of five adjacent rooms.

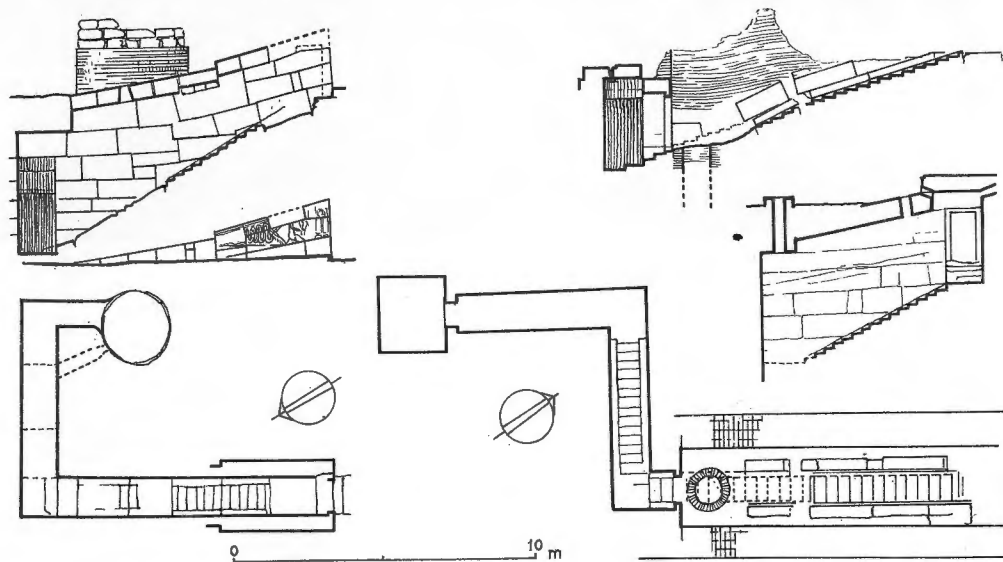
Another building similar to the chancery office of Ramses II depicted in the tomb of T'joy consists of a court, a columned hall and three contiguous chambers at the back.

Although the magazines vary in size, they all have the same layout: a central passage (N.-S.) is flanked by a series of contiguous rooms, sometimes very deep and narrow and certainly vaulted. A staircase is located near the entrance on the ambulatory street.

A few of the rooms where a bench or a stone table was found could have been workshops depending from the temple. Some were paved in stone.

Three wells (fig. 97) were used in the inner area, two having staircases descending to the water in three flights at right angles. Both of these wells

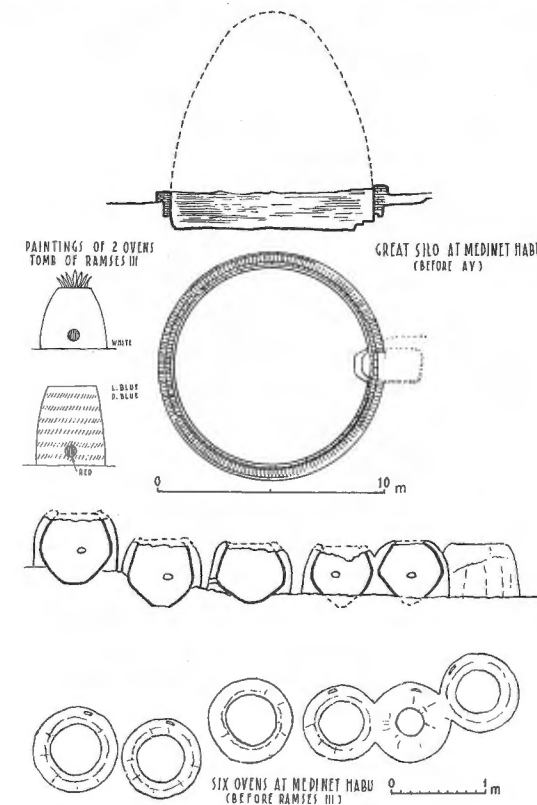
97. Plans and sections of two wells in the mortuary temple of Ramses III at Medinet Habu.



deviate from the temple axis by the same angle. The third well was in the shape of a vertical cylindrical shaft. They were built of large stone blocks, roofed over with slabs and lit through apertures in the slabs or from a special vertical light shaft. In one of the wells the first flight is built partly above ground and carefully decorated with low reliefs representing a winding winged uraeus snake and a Nile god.

SILOS AT MEDINET HABU.¹⁴⁴ Beneath the temple of Ay there were two brick silos (2 bricks thick) on a circular plan and roofed over with catenary domes. The larger one (8.9 m. diam.) is nearly the same size as that at 'Amarna. It is partly cut in the bedrock, lined with brick (31 x 15 x 8 cm.-34 x 16 x 9 cm.) and plastered. It has been calculated that such a silo, filled to 7-8 meters of its height, would contain about 400 cubic meters (fig. 98).

98. Plan and section of a large silo (before Ay) and series of six ovens (before Ramses III) at Medinet Habu, and paintings from the tomb of Ramses III representing two ovens.



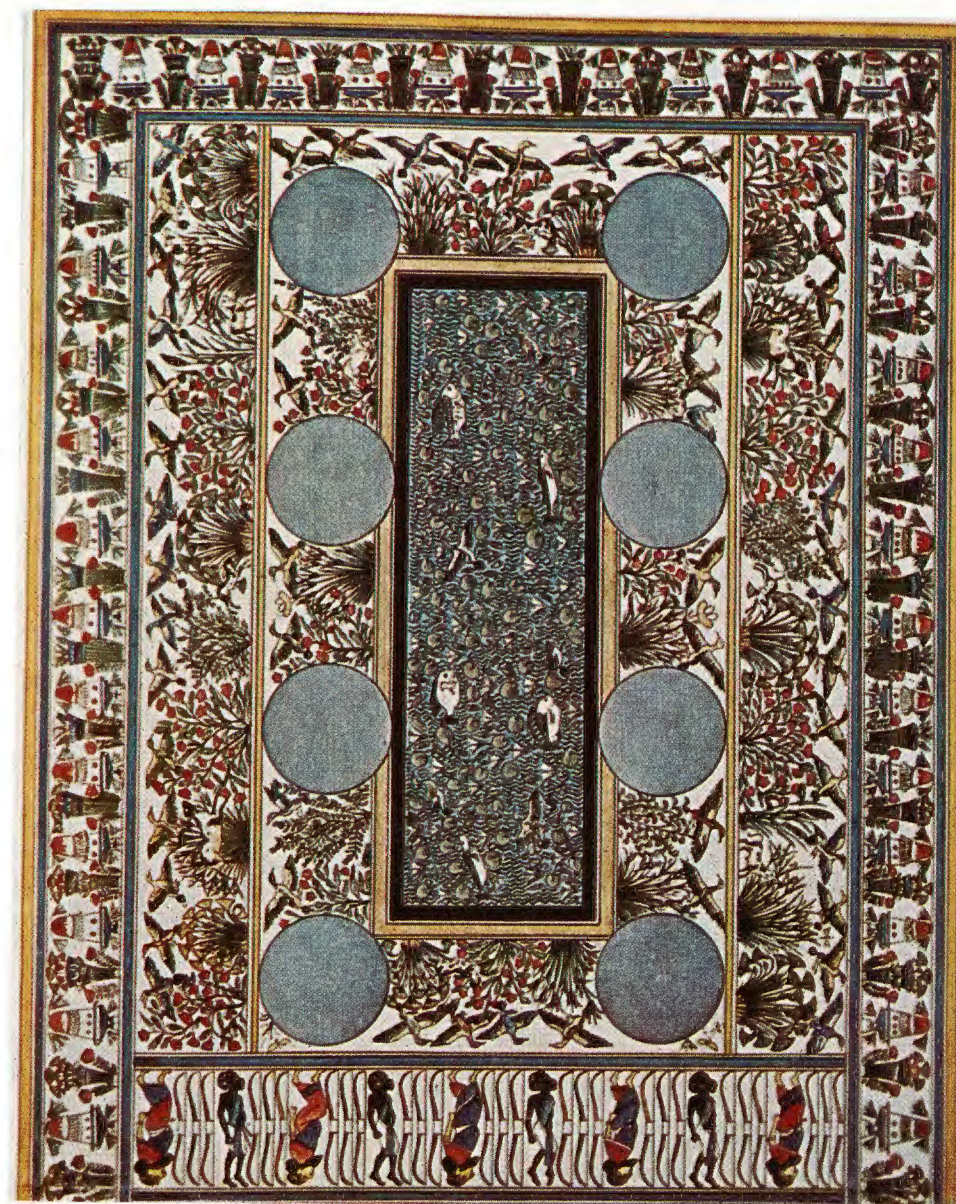
*Ovens*¹⁴⁵

A series of six large earthenware vessels partly sunk into the ground, with a hole at mid-height, and coated with clay and crushed brick were used as ovens. Such an installation is very similar to the eneolithic one at Abydos,¹⁴⁶ in spite of the long period separating both installations. Two paintings from the tomb of Ramses III represent this type of separate oven with curving outline, plastered with mud rings alternatively light and dark blue, or even white-washed.¹⁴⁷

THE ACHIEVEMENT OF DOMESTIC ARCHITECTURE

The New Kingdom is marked historically by the rise of the large capital at Thebes. According to the idyllic praise given to Thebes by Egyptian texts its dazzling splendor must have borrowed from all those contemporaneous cultures—Asiatic, Aegean, and Nubian—which had at some time or other come into contact with the Empire of Egypt through war or trade. The achievement of domestic architecture is relatively well defined through evidence from texts and representations of houses and palaces and dependencies in tombs, but mainly through substantial remains outside Thebes. The period of 'Amarna was a unique interlude in the history of the Egyptian Empire, its culture, and its architecture. It is quite easy to recognize the influence of this rich experience of individualism in later dwellings at Thebes.

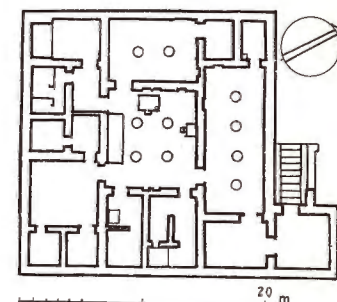
On the expensive land of Thebes the town house was probably a three-storied structure with weaving and bakery installations in the basement, stately reception rooms on the ground floor—the piano nobile of the house of a grandee at that time—private apartments on the first floor, and silos, sometimes with a pergola, on the terrace. A few trees or shrubs growing in brick containers in the lane along the façade formed a meager substitute for the beloved garden of Egyptian country houses. A staircase provided access to the various floors. This picture of a typical town house is essentially derived from representations in the tombs in Western Thebes. Definite information about sanitary equipment is lacking. It is safe enough, however, to assume some provision in this respect, on the analogy of that found in contemporaneous houses adjoining Theban palaces or in 'Amarna.

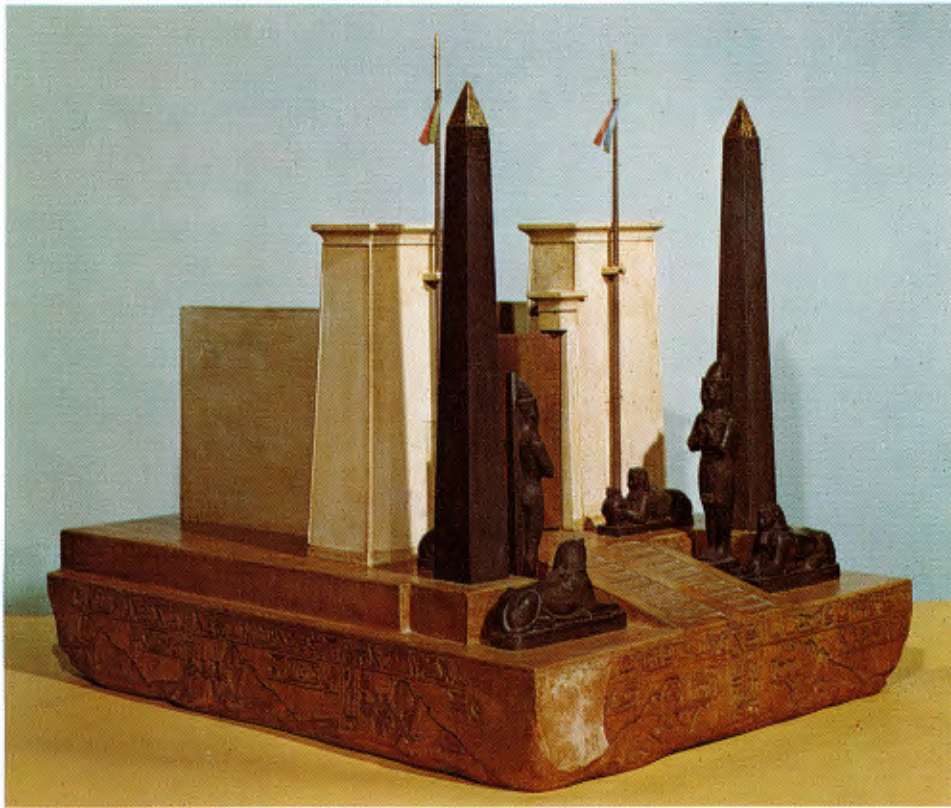


COLOR PLATE V. Restored painted pavement in the central palace of Akhenaten at 'Amarna (see p. 84). This pavement was that of the hall with eight columns south of the garden court in the north harem, in the official palace. Only the eastern half of the area is copied. The strip along the center of the hall represents bows symbolizing the traditional enemies of Egypt and bound captives like those on the steps to the throne dais, alternatively facing the northern and southern doorways. Each half of the pavement consists of a rectangular pond blue with black ripples, lotus, fish swimming and ducks alighting surrounded with thickets of greenery and birds shown in rabatment on the four sides between the bases of the columns. Beyond a second similar row of thickets with birds a border of stiff ceremonial bouquets of flowers alternating with stands of offerings surrounds the whole composition. This composition is of the same type as those of mural paintings depicting gardens in the private tombs of Thebes. The colors used are subdued hues of greenish blue and black within yellow frames enlivened with occasional dots of red. The painting in tempera on plaster must have easily worn out and had to be frequently restored. Similar pavement paintings occurred in the palace of Amenhotep III at Malqata, in the columned hall of the harem (see color plate III), and in the audience chambers (2 and 3).



COLOR PLATE VI. Restored perspective of the main hall in the villa of General Ra'mose at 'Amarna (see p. 94). Although not one of the largest, this villa in Central City is of interest on account of its relatively well preserved walls (to the height of 1 m.) illustrating the typical features of that category of mansion. The main hall is square (7 m.), echoing in the geometrical center of the plan the square outline of the house (21 x 21.5 m.; see adjoining fig.). When looking between the two eastern columns one sees behind the two other columns the western wall designed symmetrically, featuring a double false-door of pinkish stone inscribed with hymns to the Aten, flanked left by the doorway to the western reception room and right by a niche imitating that doorway. Two clerestory windows open in a garland just beneath the ceiling painted a bright blue. A platform in limestone with one step, a parapet, and a drainage hole in the front right corner serves as a stand for the water jugs and as a place for ablutions before and after meals. These meals are taken by the family on the dais against the south wall, the usual sitting place during the day. On either side of the dais a doorway opens on the private apartments of Ra'mose (*right*) and his family (*left*). The palmiform columns are in wood painted red for the shaft and bright green for the palms, and stand on broad bases of limestone. A cavetto cornice surmounts the lintels and horizontal painted panels in sequence decorate the inner side of the door-jams. The strict symmetry that governs the composition, even to have opposed walls exactly similar, is typical for the villa at 'Amarna.





COLOR PLATE VII. Restored model of a temple to Re'Horakhty-Atum by Seti I (Brooklyn Museum acc. no. 66.228; see p. 174). Of the original model only the base in quartzite hollowed with the socket holes for pieces to be inset subsists (Brooklyn Museum acc. no. 49.183, from Tell el Yahudiya). The pieces that were sphinxes, obelisks, statues, and pylon with flagstaffs could be restored and a presumed scale of ca. 1:21 deduced for them on the evidence derived from comparative analysis of monuments of the same period. As to the materials from which they were made they are mentioned in the dedicatory inscription on the sides of the base as being of an unusual type: graywacke for the obelisks, white crystalline stone for the pylon, and *mesdet* stone for the flagstaffs. The door is described as lined with copper. The model was designed to abut against a wall. Only the monumental terraced approach characteristic also for the temple of Seti I at Abydos and the pylon fronting a room have been abstracted to represent the whole temple, possibly to be used in the foundation rite "To give the house (temple) to its Lord."

For the country, architects devised other types of houses to answer the needs of the different program. Rich people could afford large land houses in formal gardens with an artificial pond, a kiosk, and numerous and varied trees surrounded by an enclosure wall. The house was separate from its dependencies and would comprise as living quarters a reception room, a living room, and one or more bedrooms.

When the master visited his lands he could find adequate, though simple, accommodation for a few days in a small rest house, characterized by a pair of ventilators opening on the roof.

The 'Amarna period was to innovate a type of extensive mansion or "villa" adapted to the new environment. As desert ground was less valuable, there was one main floor and additional apartments on the terrace, while the dependencies were in the form of outbuildings within an enclosure. No garden, or a very slight one, could be grown. Among the elements constantly used are the window of appearance in the palaces, and the broad hall and deep hall in the villas. The broad hall was probably an open loggia, facing north or west and surmounted by an upper similar room on the first floor.

Texts describe the lavish splendor and huge scale of the palaces at Thebes. Even the house of the High Priest of Amun and the refectory would have been given such rich finishings as cedarwood doors with gold inlays and carved stone. That this was no idle talk is proved by the extensive and gorgeous remains found in the excavations, whether in the residential palaces or the temple palaces on the western bank. Although the latter answered a definite program restricted to that of a royal rest house near the mortuary temple of the pharaoh, it was nonetheless a substitute for the residential palace itself. The symmetrical plan features reception rooms only: portico, window of appearance, broad hall, and a deep hall used as a throne room and provided with a double false-door at the rear. To these would perhaps be appended a royal bedroom. The relatives or retainers accompanying the pharaoh on his visit to the temple would find adequate accommodation in a few suites set as contiguous units of a uniform plan behind the palace and featuring a vestibule, a living room, a bedroom, and a bathroom. These could also accommodate the ladies of the harem (Medinet Habu). In the latter site an ambulatory surrounded the whole harem building and numerous doors shut in the inmates. Such a program here received a most successful solution—very similar, indeed, to the one in the harem of Xerxes at Persepolis (470 B.C.). In the residential

palace the harem ladies had contiguous suites on either side of a central hall leading to the throne room and private apartment of Pharaoh. The public apartments for reception and the private ones forming the pharaoh's house were set in two groups, each on a symmetrical layout, a momentous achievement in such a large project. In construction and decoration traditional trends are enriched with new ones acquired from abroad. Walls are lined with stone slabs (1.7 m. high), baths are provided with screen walls and their floor is a stone slab with a water-drain. There is a rich decoration of painted stucco on walls and pavements, faïence inlays in colored low-relief scenes or colored columns with golden bands on their lower part, and paintings on walls and ceilings. Many patterns remind one of the Aegean and Nubian styles.

Town planning seems to have followed the rules already standardized in the Middle Kingdom (Lahun) in the fortress cities (Sesebi in the Sudan) or in workmen's cities laid out by the State (Eastern Village at 'Amarna). Such a layout as that of the workmen's village at Deir el Medina does not seem to be the achievement of an architect, though the general arrangement and the plan of the contiguous houses are inspired from contemporaneous urbanism. Houses on a uniform contiguous plan enjoy much favor in State settlements, where both the orthogonal ('Amarna) and the axial types (Sesebi, Deir el Medina) of layouts are exemplified. Public facilities such as a public water-supply and cleaning of streets are available (Deir el Medina).

The type of standard housing unit was already known in the Fourth Dynasty (Khentkawes) and later in the Twelfth Dynasty (Lahun). It occurs in the New Kingdom with a similar treatment of thick walls and labyrinth plan at Abydos, or evolves into a simpler, nearly symmetrical plan eliminating corridors at Medinet Habu. The most valuable achievement in this domain of economy is the decrease of the thickness of the walls to a strict minimum, leading to a rational utilitarian planning of the built-up area. The proportion of the floor area to that of the total area reaches 80-90 percent at Sesebi, 'Amarna, and Deir el Medina, close to that of modern house-planning. The elements of this "functional" plan are reduced to a vestibule, a living room and twin rear rooms for the bed and the kitchen. Cellars and cellarettes are used instead of silos. Corridors are nonexistent. Ornamental painting adds its note of cheerful color, despite the modest standard of the house, with patterns and scenes of religious inspiration (altars, niches with stelae, painted scenes) or lay subjects (dancers, fishermen, women at their toilet).

Very little more than the complexes of the temples is known about the capitals of the Empire, Thebes and Avaris. 'Amarna, however, is unique for both its program and the amount of evidence supplied. There is no symmetry in the town plan, nor does it seem to have been preplanned, although we see provision for traffic, zoning, and emphasis on the central quarter of palaces, temples, and official buildings. 'Amarna stands out also in housing, not so much on account of its momentous achievement as for its unique character of democratization in the programs of middle-class houses and of parsimony for those of palaces and public buildings. The main incentive toward this movement, the religion of the Sun disk, was essentially democratic in character since this god dispensed his beneficent rays without distinction of classes or individuals, the whole day long.

The palaces in the Central City formed a huge complex with symmetrical groups (servants' quarters, harem, state apartments, bridge with window of appearance, coronation hall, King's House). Such elements as a square, pillared coronation hall and ramps ascending to the doorways on one side, and descending from them on the other side, for chariot traffic seem to appear for the first time and remind one of similar features in Mesopotamian palaces. Decoration in palaces shows a mixture of official subjects known in the Theban palaces (panels with plants symbolic of the South and the North) and scenes of the royal family in the new untraditional naturalistic style. The King's House proper is no more than a mansion with a nursery.

Democratization at 'Amarna is further recognizable in the planning of the villa, embodying the main features of the earlier mansion of the rich. One standard type, varying in scale and detail, is used throughout. Climatic conditions have led to the elaboration of one or two loggias, set north and west, and several high-roofed halls with clerestory lighting. The private apartments show a refined and most successful complex of square hall, master's bedroom with alcove surmounted by a ventilator, bathroom, and latrine.

Ingenious planning is conspicuous, not only in villas but in secondary programs such as stables for the horses and bakehouses. Stables feature a built-up manger with tethering-stones on one side and a feeding-passage on the opposite side, accessible from outside. A bakehouse (T.36.36) shows the special arrangement of one room for kneading, a second one for exposing loaves on a rack, and a third one with the ovens. Details such as furniture are

also treated successfully and are built in (divans, shelves, stoves) as in modern architecture.

Although closely resembling the plan of Lahun in its general layout, that of the workmen's village at 'Amarna East differs essentially in its constituent elements. The houses have evolved into highly efficient units, with thin walls and no corridor. This can indeed be considered as the apex in planning uniform contiguous houses: entrance vestibule, living room with brick divan, bedroom, and kitchen with oven, storage bins, and staircase to the terrace.

And last, but not least, harmonic design is consistently used for the plan and elevation of monumental buildings such as Theban palaces and even for the mansions at 'Amarna.

Many new constructional features appear in the New Kingdom, and especially at 'Amarna. It has already been pointed out that walls would vary in thickness according to the character of the building. State buildings for officials or workmen were carried out economically with thin walls and light ceilings, while temple buildings had thick walls carrying vaults. In neither type, however, could any sanitary equipment be recognized.

At 'Amarna, democratization in the design was allied to parsimony in the construction, the latter approach probably dictated by financial conditions. The Palace had the sole responsibility for the building of temples and palaces and the workmen's village as well. Even though projects were carried out with the utmost economy, the aesthetic aspect was not disregarded. Even in the royal palace, columns and uraei cornices were inlaid on the side most likely to be seen, while they were just painted on the reverse.¹⁴⁸ Cheap imitations of capitals in the North Palace used soft pastes instead of faïence inlay.¹⁴⁹ Color was used lavishly throughout to conceal the poverty of the materials.

The dwellings for the workmen had obviously to follow a stricter economy in both space and materials. Light materials are used: thin brick walls (0.13 m.), roofs of poles and rushes plastered with mud, stairways in brickwork on slanting poles, with cupboards under them. The use of limestone for carving furniture such as seats and tables¹⁵⁰ is probably to be ascribed to the same lack of financial resources. Concrete proves to be an adequate material, inexpensive and easy to work, not to mention the time factor. Large blocks of concrete are cast in molds (1.5 x 0.6 x 0.35 m.).¹⁵¹ Cement casts are used as models, especially for the royal cartouches, by inexperienced workmen.¹⁵²

However, the need for economy in no way excluded structural soundness, and some new features bear testimony to the technical capability of the architects. Some regulation regarding town planning must have been enforced: the choice and the tenancy of the site were defined by erecting boundary-stelae inscribed with the name of the tenant and a description of the plot.¹⁵³ Features that had been known in the Middle Kingdom are still occurring: corners of pilasters are reinforced against traffic shocks, the walls of a ramp (Bridge) increase in thickness as pressure from the enclosed filling increases with the height¹⁵⁴ (cf. stepped retaining wall in Middle Kingdom). Other features seem to be used for the first time: stairs are built on wooden beams, brick pillars are reinforced with timber¹⁵⁵ (cf. construction of Middle Kingdom fortresses in Nubia), enclosure walls are very thin and reinforced with buttresses, and spiral or winding stairways are built in tombs and wells. The structure of the gable, used since the Archaic Period in light awnings and pavilions or as a pent roof in massive stonework in the interior of the pyramids, seems to be treated as a wooden truss in the roof of large magazines. Such seems to have been the scientific probity of the builders that gypsum specimens were presumably subjected to inspection and test at the Office of Works at 'Amarna.

In ornamentation, old techniques, such as that of inlay, are used extensively and possibly also new ones, like that of molded glazed mud for cornices. Painting makes use of the fresco technique for the background and of tempera for the details (Malqata palace).

III

Religious Architecture

Religious architecture of the New Kingdom is perhaps the richest domain of Egyptian architecture as a whole, and until very recent times this branch provided our total knowledge of ancient Egyptian architecture. The number of well-preserved temples as well as their scale and richness in decorated features are the main reason for such a notoriety. Evidence from texts and from scenes gives supplementary information, always interesting, the more so when it helps us to catch a glimpse of finishings in materials that have otherwise long ago disappeared.

EVIDENCE FROM TEXTS

Evidence from texts about religious architecture during the New Kingdom is incomparably richer than that for any other branch of architecture in the same period, or even in any other period. This weight of textual evidence corresponds to the wealth of remains of monuments, mainly at Thebes, the capital. It is true that not much information of a technical nature can be derived from these texts, but they are of great help for the study of the construction and restoration of temples. The temple is usually the "castle of god" (Egyptian *hwt-netjer*), but the desert temples and the rock-cut temples are often called "strongholds."¹⁵⁶ The mortuary temples on the western bank of Thebes or the cult temples at Soleb (Nubia) or at Redesiya provide examples. This conception is emphasized in the text itself (Soleb): ". . . making for him an excellent fortress, surrounded with a great wall, whose battlements shine more than the heavens, like the great obelisks. . . ." The enclosure of the mortuary temple of

Thutmose IV at Thebes is the "Fortress-of-Menkheprurec," and it was actually filled with captives from Kharu and Nubia.¹⁵⁷ Rock temples are explicitly said to be hewn out of the cliff: Ramses II, the great specialist in rock temples, says about his small temple for his wife at Abu Simbel: ". . . he made (it) as his monument for the Great King's-Wife, Nefretiri, beloved of Mut . . . , a house hewn in the pure mountain of Nubia, of fine, white and enduring sandstone, as an eternal work."¹⁵⁸ His father Seti I had described the work on the rock temple at Redesiya: ". . . that there should be made by digging in this mountain, this temple, wherein is Amon. . . ." ¹⁵⁹

A common feature of such Egyptian descriptions is the rich variety of terms relating to the building itself or to its materials. Such terms could be considered as the specifications of Egyptian religious architecture, and a survey of these will prove interesting. The temple is usually "like heaven, beautiful, pure, glorious and excellent." Its pylons "reach heaven and the flagstaffs the stars of heaven." They are "of real cedar, wrought with Asiatic copper, their tips of electrum, approaching heaven." "Two mighty obelisks of red granite, with pyramidions of electrum, rise at the double façade of the temple." The columns "are wrought with electrum," usually in stone, but originally in wood. The shrines "of sandstone, ebony or enduring granite, lined inside with electrum, or gold of the best of the hills, are placed upon a base of alabaster from Hatnub." Doors are "of new cedar, of the best of the Terraces (Lebanon), mounted in real black copper and wrought with inlaid figures in electrum or gold, representing the great name or the shadow (of the god)," "like the luminous mountain-horizon of heaven." The "shadow"¹⁶⁰ of the god is the representation of the deity on the copper lining of the door as if coming out of his temple. Pavements are covered with silver or gold, and offering-tables are of silver, gold, bronze, or Asiatic copper. One boasts of using the "beautiful stone of Ayan, fine white sandstone, every splendid costly stone," or finally "that never was done the like since the beginning." In the description of restoration work the building is said to have been in ruin. The walls were rebuilt in stone and brick, ruined doors replaced by new ones, and wooden columns by stone ones.

Temples, like any other creations of the Egyptians, were given names. It is known that canals, wells, barges, spans of horses, woven-stuff pavilions, even stables and magazines were entities that bore proper names. These names of the temples can express a quality of the building or its lord: "Shining-

in-Truth" (Temple of Amenhotep III at Soleb),¹⁶¹ "Most-Splendid" (Temple of Thutmose III at Deir el Bahari),¹⁶² "Splendor-of-the-West" (small temple at Medinet Habu), "Splendid-is-the-Seat-of-Amun" (small temple at Medinet Habu),¹⁶³ "Heat-which-is-in-Aten" (Sanctuary of Horakhty at Karnak built by Akhenaten).¹⁶⁴ Sometimes the name clearly expresses ownership: "House-of-Nibmare'" (temple of Amenhotep III at Memphis),¹⁶⁵ "Temple-of-the-Son-of-Seti-Mernamon-in-the-House-of-Amon" (northern part of the hypostyle hall at Karnak, by Seti),¹⁶⁶ "House-of-Usermare-Meriamon-in-the-House-of-Re'" (temple of Ramses II at Derr),¹⁶⁷ "Temple-of-Ramses-Meriamon-in-the-House-of-Amon" (temple of Ramses II at Luxor).¹⁶⁸ Or the name may designate the deity to whom it is dedicated: "House-of-Amon-on-the-West-of-Thebes" (mortuary temple of Amenhotep III),¹⁶⁹ "Temple-of-the-Spirit-of-Seti-Merneptah-in-the-House-of-Ptah," "Temple-of-the-Spirit-of-Seti-Merneptah-in-the-House-of-Amon-on-the-West-of-Thebes" (mortuary temple of Seti).¹⁷⁰ Parts of the temple such as shrines and doors are also named: "Amon-has-received-his-divine-barque" (pylon in the mortuary temple of Amenhotep III),¹⁷¹ "Amon-Mighty-in-wealth" (door of Thutmose I at Karnak),¹⁷² "Mernmare'-is-rich-in-food" (door of Ramses II in the temple of Seti at Abydos),¹⁷³ "Usermare'-is-splendid-in-strength" (door in the temple of Ramses II at Serre),¹⁷⁴ "His-great-Seat-is-like-the-Horizon-of-Heaven" (Holy of Holies of Thutmose III).¹⁷⁵ Although not directly related with an architectural study, a survey of these types of names of religious buildings helps to picture the ideology of the pharaohs and the people who spent such a great amount of energy and wealth on their temples.

Written sources of information are here again either royal, being official texts inscribed on the monuments themselves and on stelae, or private, occurring in biographical inscriptions of high officials on the rocks of the quarries at Aswan or in their tombs.

ROYAL INSCRIPTIONS

The types of the royal texts are varied, ranging from the simplest record or dedicatory formula to the most informative building inscription. Some monuments bear a very short inscription mentioning the name of the pharaoh who restored or built them. The high priest of Amun, Menkheperre', who ruled in

the Twenty-First Dynasty, carried out many works but only mentioned his names and titles. In the temple at Luxor one reads: "Restoration of the monument, which the High Priest of Amon-Re, king of gods, Menkheperre, triumphant, son of the Lord of the Two Lands, Meriamon-Paynozem I, made, in the house of his father, Amon of Luxor."¹⁷⁶ Curiously enough, such huge and valuable monuments as the red granite obelisks that were erected in relatively large numbers by the New Kingdom monarchs do not bear long historical inscriptions on their faces. The dedicatory inscription stretches vertically on the south face, while on the other ones are laudatory inscriptions of the pharaoh. On the obelisk of Thutmose III, now at Constantinople, the dedication reads: ". . . (Thutmose III) he made (it) as his monument for his father, Amon-Re, lord of Thebes; erecting (for him very great obelisks of red granite, the pyramidions of electrum; that he may be given life, like Re, forever)."¹⁷⁷ A unique and most interesting text occurs on the obelisk of Thutmose III, originally at Karnak and now in the Lateran. The original inscription, as a single column in the middle of each face, is that of Thutmose III, who died before he could erect the monument. His successor set it up and recorded this fact in side columns. On the south face one reads: ". . . Thutmose (III). He made (it) as his monument for his father, Amon-Re, lord of Thebes, erecting for him a single obelisk in the forecourt of the temple over against Karnak, as the first beginning of erecting a single obelisk in Thebes; that he might be given life."¹⁷⁸ Thutmose IV added on the same face: "Thutmose (IV), Begotten of Re, beloved of Amon. It was his majesty who beautified the single, very great obelisk, being one which his father, the King of Upper and Lower Egypt, Menkheperre (Thutmose III) had brought, after his majesty had found this obelisk, it having spent 35 years lying upon its side in the hands of the craftsmen, on the south side of Karnak. My father commanded that I should erect it for him, I, his son, his saviour."¹⁷⁹ In this type of dedication it is usually mentioned that two obelisks of red granite are erected in front of the façade of the temple, their pyramidions being covered with copper or bronze.¹⁸⁰ On the obelisk at Heliopolis, erected by Seti I but inscribed by Ramses II, the inscription states that Seti "filled Heliopolis with obelisks."¹⁸¹ From such building inscriptions we are informed incidentally that a certain pharaoh caused obelisks to be erected.

The dedicatory inscription found on a monument or a stela is the official record stating briefly the name of the pharaoh who caused it to be made and

the deity to whom it was dedicated, supplemented sometimes by a sketchy description. Thutmose III made an ebony shrine at Deir el Bahari, on which he wrote: "The Good God, Lord of the Two Lands . . . King of Upper and Lower Egypt, Okhepernere, Bodily Son of Re, Thutmose (II); he made (it) as his monument for his father, Amon-Re, making for him an august shrine of ebony of the best of the highlands, that she [he?] might live and abide (through him) like Re, forever."¹⁸²

Occasionally, a more informative and interesting kind of text occurs on a stela or on the monument itself. This type tends to emphasize the interest of a certain pharaoh in the building of a temple. The scheme of the text is ingeniously woven, showing how the pharaoh conceived the plan to build a temple for a god, how he summoned his courtiers in the audience hall to expose his views and ask for advice, and finally issued instructions to his chief treasurer. Such is the type of text inscribed by Ahmose I about his constructing a mortuary complex for his grandmother Tetisheri at Abydos,¹⁸³ or that of Thutmose I about the sacred furniture in the temple at Abydos,¹⁸⁴ or the much later summons of Ramses II to his court when he decided to complete his father's buildings¹⁸⁵ on finding the temple of Seti I at Abydos unfinished and its endowments violated. The most elaborate of these texts is that of Ramses II, from the first court in Seti's temple at Abydos. This pharaoh visited Abydos on the occasion of his voyage to Thebes and found the tombs of the earlier pharaohs of the First Dynasty in ruins and the temple of Seti unfinished. He summoned his court, and having announced his intention of completing his father's buildings, he said:

I will lay the walls in the temple of him that begat me. I will charge the man of my choice, to conduct the work therein. I will mason up therein the breaches of its walls . . . its pylon-towers of. . . I will cover its house, I will erect its columns, I will set stones in the places of the lower foundation, making monument upon monument, two excellent things at one time, bearing my name and the name of my father, for the son is like him that begat him.¹⁸⁶

. . . Now after . . . these utterances which these nobles (had spoken) in the presence of their lord, his majesty commanded to commission the chief of works; he set apart soldiers, workmen, carvers with the chisel, . . . draughtsmen, all ranks of artificers, to build the holy place of his father, to erect that which was in ruins in the cemetery, the mortuary house of his father.¹⁸⁷

The deceased Seti I replied with a long speech to his son's benefactions and prayer, promising him a long life full of all joys.

Unlike these official records is the unique text on the so-called Sphinx stela of Thutmose IV, relating how the god Harmachis himself appeared to the young prince in a dream and entreated him to disengage his image, the Sphinx at Giza, from the encroaching sands.¹⁸⁸

Another category of official texts, that of the boundary stelae, is more likely to give architectural or town-planning data. These were erected on the boundaries of a district or a town as landmarks. The most important are the fourteen stelae cut in the cliffs around the site of Akhenaten's capital Akhetaten ('Amarna). They bear long texts with a low-relief scene of the pharaoh and proclaim his gift of Akhetaten to Aten, the actual limits and area of the site, and occasionally the respective positions of other stelae.¹⁸⁹ It is from the study of the location of these stelae that surveying units, whose length varied locally, were calculated (*itr* = 4,400 cubits [2.3 kms.]).¹⁹⁰ The texts of the boundary stelae delimiting the lands endowed for the maintenance of the statue of Ramses VI have been copied in the tomb of Penno (at Derr in Nubia). Each of the five districts is demarked by four boundaries and the area enclosed: "The South is the lands of the domain of the King's-Wife, Nefretiri, which rests in Miam. The East is the desert. The North is the flax fields of Pharaoh, L. P. H. The West is the Nile. [*Area:*] Three khet."¹⁹¹

The most informative kind of text is the building inscription occurring usually on the monument itself and giving a description of the building activity of the pharaoh. However vague it might be, the description is helpful for determining the history of the monument and its restorations. One can often retrace through these official records, which are full of exaggeration and boasting, much of the historical background of a large temple complex, such as that at Karnak or at Luxor, or one of the mortuary temples in Western Thebes, such as that at Medinet Habu. This last temple, being one of the best preserved, offers possibly the most suitable example for the correlated study of such building inscriptions.

It seems that war captives were employed in the construction of the temples. Amenhotep III, speaking to Amun about his mortuary temple behind the colossi of Memnon, says: "I caused thee to seize the Tehenu (Libyans) so that there is no remnant of them. (They) are building in this fortress in the name of my majesty."¹⁹² Such foreign settlements were maintained even after

the completion of the building stage and were transformed into permanent ones.¹⁹³ The influence of clever foreign craftsmen upon Egyptian art, even upon architecture, is undeniable.

Many of the inscriptions deal only with occasional restorations or the erection of some element such as a gateway or a chapel. One of the earliest instances is the record by Thutmose III of his coronation and building activity in the temple of Amun at Karnak:

I made my monument, I recorded my command at the stairway of the lord of Karnak, of the fashioner of all that is or exists. . . . anew, together with a "Divine Abode," a monument of fine white limestone. The king himself performed with his two hands the stretching of the line and the unraveling of the plan-net, putting (it) upon the ground and furnishing on this monument the exaction of work, according to the command of . . . enduring work of their hands. Behold, my majesty erected for him an august Holy of Holies, the favorite place of Amon (named): "His-Great-Seat-is-Like-the-Horizon-of-Heaven," of sandstone of the Red Mountain. Its interior was wrought with electrum. I (erected) the first portal (named): "Menkheperre-is-Splendid-in-the-Opulence-of-Amon;" the second portal (named): "Menkheperre-is-Abiding-in-Favor-with-Amon;" the third portal (named): "Menkheperre-is-the-Great-One-of-the-Souls-of-Amon;" wrought with real electrum, through which Mat enters for him . . . making festive the monument.

My majesty erected an august pylon [Pylon VI] of the interior in front of (the holy of holies) . . . I erected for him a great door, fashioned of new cedar, wrought with gold, mounted with real black copper . . . with copper. The great name upon it was of electrum, doubly refined gold and copper . . . the . . . thereof were of doubly refined gold made in the likeness of the horizon of heaven. It was more beautiful than (anything) that has ever been.¹⁹⁴

Of the gates of Thutmose III found in Karnak, two could be identified with the first and third portals described. The pylon, which is Pylon VI, corresponds exactly to the description, standing just in front of the Holy of Holies.¹⁹⁵

The inscription of the temple of Pakhet at Beni Hassan, the so-called Speos Artemidos, mentions the restoration of two temples and the building of that of Pakhet:

The temple of the Mistress of Cusae which had begun to fall to ruin, the ground had swallowed up its august sanctuary, so that the children played upon its house; the serpent, it caused no fear; the poor counted the . . . in the covering, no processions marched. I adorned it, having been built anew, I overlaid its image with gold; in order to protect its city. . . . Pakht the great, who traverses the valleys in the midst of the eastland, whose ways are (storm-beaten). . . . I made her temple with that which was due to her ennead of gods. The doors were of acacia wood, fitted with: bronze. . . . I built his great temple of limestone of Ayan, its . . . were of alabaster of Hatnub, the doors were of copper, the . . . thereon were of electrum. . . .¹⁹⁶

Thutmose III records the laying out of a new garden at Karnak, for Amun, perhaps at his feast "Going-forth-of-Min": "My majesty made for him a garden for the first time, planted with every pleasant tree, in order to offer vegetables therefrom for divine offerings of every day, which my majesty founded anew as increase of that which was formerly . . . with maidens of the whole land."¹⁹⁷ More tangible data are given by Thutmose III about his building and restoration in the hypostyle hall, between Pylons IV and V at Karnak:

He made (it) as his monument for his father Amon-Re, erecting for him (4 columns) of sandstone set up (in) the hypostyle, as (a renewal of that which) his father had made, the Good God, Lord of Offering (viz., Thutmose I), shaped of cedar. My majesty added 4 columns to the two columns in the north side, together 6; wrought with. . . . The height thereof was made 30 cubits, on both sides of the great august portal (northern portal), . . . throughout. They illuminated Karnak like . . . of sandstone, painted with figures of my father Amon, together with figures of my majesty, and figures of my father, the Good God (viz., Thutmose I). Behold, as for that which was found going to ruin among them, my majesty established it with sandstone, in order that this temple might be established like the heavens, abiding upon their four pillars, as a monument, great, excellent and useful for the lord of eternity; of granite, ivory, of sandstone, . . . silver. . . .¹⁹⁸

Such texts recur in nearly every reign, mentioning some restoration or addition in the same vague terms, occasionally with some dimensions (Amenhotep II at Amada,¹⁹⁹ the destroyed mortuary temple of Amenhotep III at Thebes,²⁰⁰ Luxor temple,²⁰¹ Soleb,²⁰² Horemheb at Thebes,²⁰³ Seti I in his

mortuary temple at Qurna,²⁰⁴ Ramses II at Memphis,²⁰⁵ and elsewhere,²⁰⁶ Ramses III in his mortuary temple at Medinet Habu,²⁰⁷ Ramses XI in the temple of Khonsu at Karnak,²⁰⁸ Pinedjem,²⁰⁹ Sheshonq).²¹⁰

A few texts are not subject to this uniform scheme and describe some original project such as the preparation and transport of Hatshepsut's obelisks (Deir el Bahari),²¹¹ or the plan of Seti I to establish a settlement and a temple (Redesiya).²¹²

A comparative study of the existing buildings of the mortuary temple of Ramses III at Medinet Habu with various corresponding descriptions taken from contemporaneous Egyptian texts might prove interesting. Hölscher, who excavated and studied the temple, gathered the corresponding texts.²¹³ Proceeding from the approach to the front: "Its (the temple's) pylons were of stone, looking (up) to the sky, inscribed and engraved with the chisel in the great name of thy majesty" (Papyrus Harris I, IV, 1-2).

First court: "(The king made) . . . a divine forecourt for the lord of gods so that he might rise and shine in it" (from Great Pylon, rear, near top of south tower, south end).

Pylon II: "He (Ramses III) made a monument for his father Amon-Re', the making for him a great portal of beautiful red granite, (with the) door of cedar bound with copper (and with) figure(s) of dja'm gold, the name of which is: 'Beautiful-is-Ramses-for-Amon-rejoices-at-seeing-it'" (Pylon II, front, bottom of doorjamb).

Second court: "He (the king) made for him (Amon) a festival hall . . . surrounded by very great monuments; it appears like the horizon of heaven" (Pylon II, rear, top of south tower).

According to an inscription on the western jamb of a narrow doorway at the north end of the terrace, the doorway was used to bring in offerings: "The good god, abundant of fowl, who makes festive the treasury with good things and fills his house with sustenance daily, with gold and every (kind of) costly stone."

Great hypostyle hall: "He (Ramses III) made a room for his father Amon-Re', king of gods, the making for him of an august temple of excellent eternally enduring work, provisioned and overflowing day and night, while Amon rests in his palace and the Ennead who are in Karnak rejoice at its beauty" (second court, frieze on north wall).

This collection of texts relating to the temple at Medinet Habu is a

typical example of what is to be expected from a systematic study of Egyptian texts describing temples.

Sometimes the building inscriptions or restoration texts supplement their "architectural description" with a list of the endowments, whether of sacred furniture, offerings, or land. A most instructive source of information about the enormous property of the temples of Amun during the reign of Ramses III is the Papyrus Harris.²¹⁴ This record gives an adequate idea of the gathering of riches by the priesthood of Amun in the Twentieth Dynasty, surpassing by far those of all the other priesthoods in the whole country. These texts help to picture the background of the rise of Amun's clergy to royal power with the high priest Herihor in the Twenty-First Dynasty. With the expansion of the Empire, temples were built by the Egyptians as far as Djahi in Canaan, under Ramses III.²¹⁵

PRIVATE TEXTS

In their biographical inscriptions on the walls of their tombs the great officials who had to deal with architectural projects, such as the chiefs of works or the treasurers, never failed to boast about their achievement in this domain. Usually they are not satisfied with a mere listing of their works but append a more or less detailed description, which on comparison with the actual monuments proves to be remarkably veracious. The themes and the style of these texts are not stereotyped as are the royal ones, and they supply a host of useful and technical data.

It is noteworthy that the propensity of pharaohs to endow or even to build the tombs of their courtiers, so conspicuous toward the end of the Old Kingdom, is no longer noticeable. The endowment of the mortuary temple of Amenhotep son of Hapu by his sovereign Amenhotep III²¹⁶ can rightly be considered as an exception. Many of the texts lay emphasis upon the reliability of the official, which quality led him to be chosen by the pharaoh for certain works, such as the preparation of the royal tomb in the cliffs of Western Thebes (Ineny, Hapuseneb), or a sacred cult statue, "no one seeing, no one hearing."

Ineny,²¹⁷ the architect of Thutmose I, II, III and Hatshepsut, gives in his tomb murals a full description of his preparation of the cliff tomb of Thut-

mose I, the first of its kind for which he devised a new method of plastering with clay from the clay fields that he laid out especially for the purpose. Of his extensive works at Karnak he says:

I supervised the great monuments that he caused to make in Karnak, erecting a hall with columns, erecting great pylons on its two faces, in beautiful white stone of 'Ayn, erecting august flagstaffs at the double doorway of the temple, in real 'ash-wood from the best of the terraces, their heads being in *dja'm*-gold; I supervised the erection of . . . lined with *dja'm*-gold; I supervised the erection of the great doorway "Amun is the One Mighty of strength" whose great door leaf is of Asiatic copper, and upon which is the shadow of Min modeled in gold; I supervised the erection of two great obelisks at the double doorway of the temple, in granite.

He also describes the boat 120 cubits long and 40 cubits wide he built to transport the two obelisks to Karnak.

Senmut,²¹⁸ the favorite architect of Hatshepsut, cites in general all the works he had to achieve at various places: Karnak, Hermonthis, Deir el Bahari, Isherw, Luxor, and how he was presented with a statue by the queen and the pharaoh.

The way of describing the works achieved by the architect Thutiy²¹⁹ (Thutmose III) is quite original: the title phrase is written vertically and it embraces fourteen horizontal lines giving a detailed list of his works: "I acted as chief, giving the directions; I led the craftsmen to work in the works, in . . ." There follows an account of the various achievements: Nile barge, shrines at Deir el Bahari and Karnak, measuring the tribute from Punt. His list of works at Deir el Bahari is certainly most informative:

"Most Splendid" (Deir el Bahari temple), the temple of myriads of years; its great doors fashioned of black copper, the inlaid figures of electrum. Khasikhut, the great seat of Amon, his horizon in the west; all its doors of real cedar, wrought with bronze. The House of Amon, his enduring horizon of eternity; its floor wrought with gold and silver; its beauty was like the horizon of heaven. A great shrine of ebony of Nubia; the stairs beneath it, high and wide, of pure alabaster of Hatnub. A palace of the god, wrought with gold and silver; it illuminated the faces (of people) with its brightness.

Hapuseneb,²²⁰ an architect and vizier, conducted the work upon a cliff tomb, possibly that of Hatshepsut. In the tomb of Rekhmire,²²¹ the vizier of Thutmose III, interesting scenes of artisans and technical data are given. Other architects mention various works: Menkheperre'seneb (Thutmose III),²²² Amenhotep son of Hapu (Amenhotep III),²²³ Roy (Merneptah),²²⁴ Amenhotep (Ramses IX).²²⁵ It is noteworthy that the refectory of the high priests in the temple of Amun at Karnak had been built by Roy and was restored, about a century later, by Amenhotep (see p. 13).

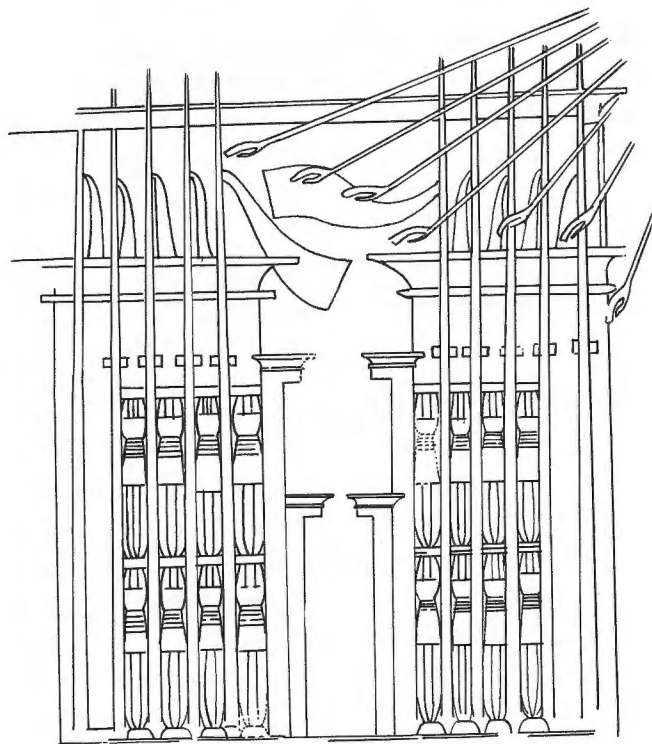
REPRESENTATIONAL EVIDENCE

Numerous drawings help to complement the documentation on religious architecture, which is rich enough in extensive remains. A large proportion of this graphical evidence comes from the tombs at 'Amarna and represents the temples in this ephemeral capital. Other drawings are from scenes in tombs and temples at Thebes and from tablets and ostraca.

'AMARNA.²²⁶ The simplicity of the temple of the Aten may explain the success of the contemporaneous artist at representing its main features quite clearly and accurately enough on the walls of the rock-cut tombs. Nothing of this success was attained when they tried to represent the palace, a much more complicated complex of buildings.

THE PYLONS. In most of the tombs one or more of the temple pylons has been represented. According to these drawings three types of pylons can be differentiated:

Type I. In the tomb of Meryre' the front façade of the Great Temple assumes the shape of a pylon with two high towers, with vertical faces crowned with a cornice, flanking two doorways of different sizes, with broken lintel. In front of each tower five flagstaffs carrying flags are fixed vertically and two superimposed rows of four papyriform columns with bud capitals are shown between the flagstaffs (fig. 99). When compared with the actual remains of the façade of the temple "Gem-Aten" this drawing is found to correspond quite closely. Actually the towers each had five flagstaffs and an abutting porch with eight columns, erected on a massive platform.



99. Representation of the pylon of the Gem-Aten from the tomb of Meryre' at 'Amarna.

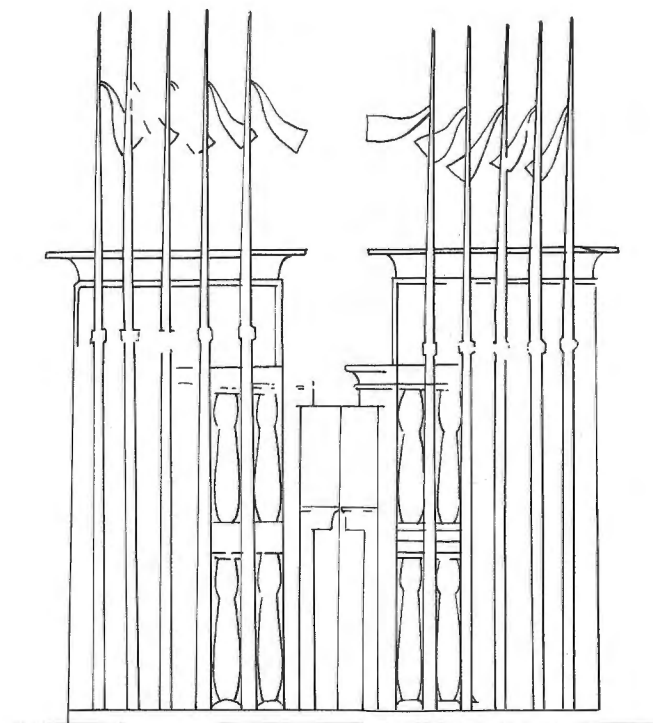
Type II. Four drawings represent a pylon similar to the preceding one, but having only two superimposed rows of two columns in front of each tower. This seems to represent the façade of the sanctuary, with two porches of four columns each (fig. 100).

Type III. The towers have no flagstaff, but only the abutting porches with four columns each, and probably two royal statues.

THE GREAT TEMPLE AT 'AMARNA. This temple is represented in most of the tombs, either complete (Meryre', Panehsy) or only its sanctuary (Ahmose, Pentu).

According to the drawings the temple consisted of three parts: a court, the temple proper, and a sanctuary (fig. 101).

The court. A high wall crowned with a cornice surrounds the buildings and opens on the façade with three doorways, the central one in the shape of a gateway. The inner wall has no cornice.



100. Representation of the pylon of the Sanctuary from the tomb of Mahu at 'Amarna.

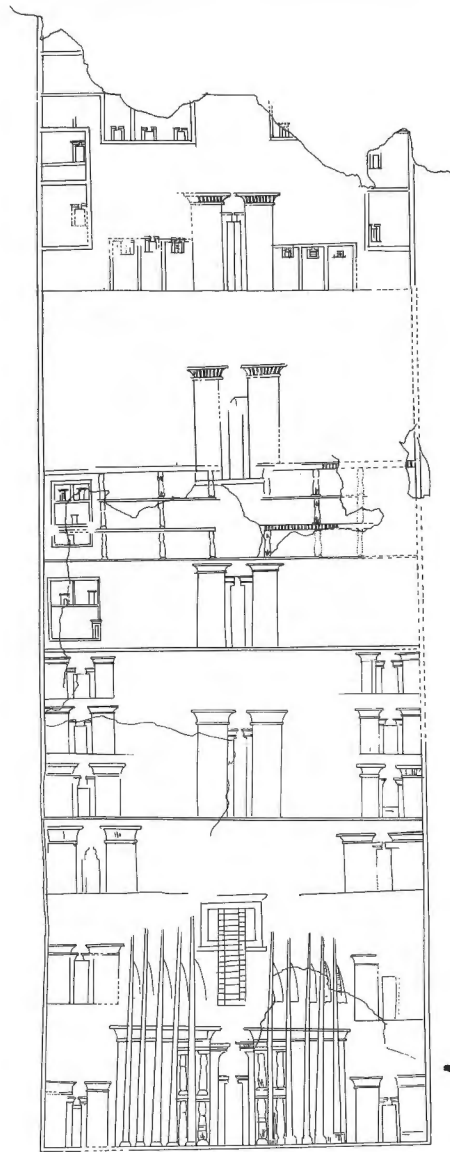
The temple. An entrance court precedes the temple and contains one or two villas (three contiguous rooms and a hall) on one or both sides of the entrance portal. Abutting on the left wall of the court is a large enclosure, the "slaughter court." In the rear of the court are three rectangular ablution-basins. Between the outer and inner walls of the court are rows of offering-tables.

The façade of the temple is in the shape of a pylon with two towers faced with five flagstaffs each and a porch on four columns.

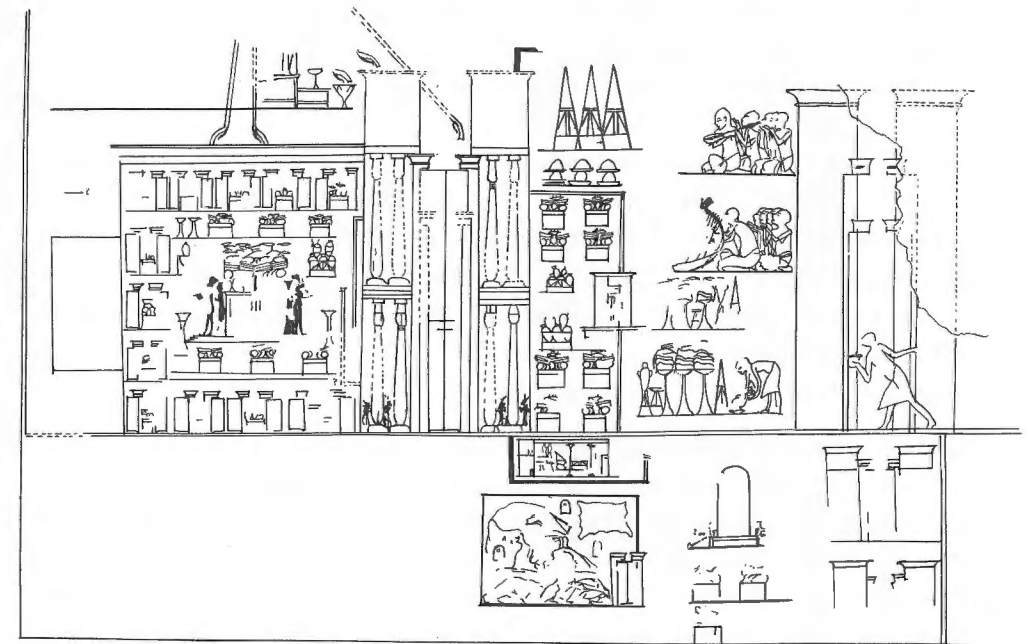
Behind the pylon stretches a court with the great altar, bordered by a row of buildings faced with pylons.

An empty shallow court stretches transversely, having only a pylon faced with cells on both sides.

A third court follows, bordered on its rear by a portico on eight bud papyriform columns. On the sides are two villas of the simplest 'Amarna type



101. Plan and elevation of the Great Temple at 'Amarna from the tomb of Meryre' showing from the bottom upward: the entrance portal and court, the façade of the temple pylon, the great altar court, a second court, a third court with its portico, a fourth court, and part of the fifth court bordered by eighteen cells.



102. Plan with rabatted elements of the Sanctuary, from the tomb of Ahmose.

(entrance hall and two contiguous rooms).

The fourth court had nothing but eight altars. Each of the fifth and sixth courts had eighteen cells bordering the walls, each with a simple doorway. In the center was a large altar surrounded by eighteen offering-tables.

The Sanctuary (fig. 102). As in the entrance court of the Great Temple, eight basins are laid out in front of the outer walls of the sanctuary. In the interior, one or two large stelae, sometimes adjoining a royal statue, are erected on a platform. Abutting on the left wall are the slaughter-court and two villas.

The façade consists, as does that of the temple, of a pylon with two porches on four columns each sheltering four standing statues of the king. On either side of the façade is a screen wall running parallel to the side and enclosing an empty passage or a villa—a unique feature indeed.

All the drawings agree in showing, behind the pylon, two walls parallel to the internal face and forming a screen hiding the interior—a winding device used since the earliest times in front of the entrances to forts and purification huts, and probably also in all cult temples.

The walls of the court are bordered with six cells on either side, and a great altar surrounded by offering-tables is laid out in the center.

A passage runs transversely behind the sanctuary and communicates with a court containing various buildings.

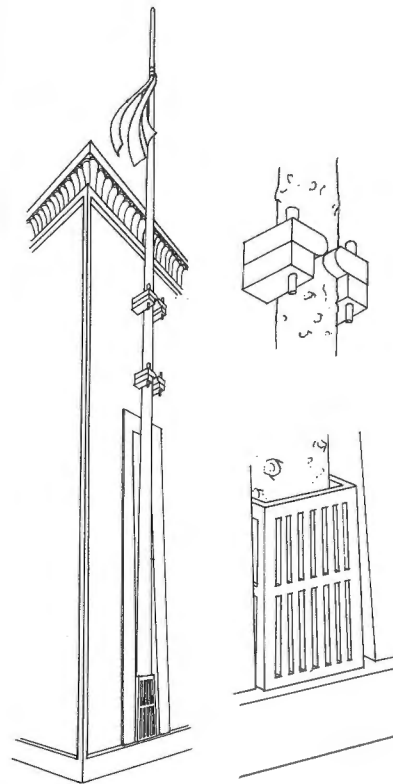
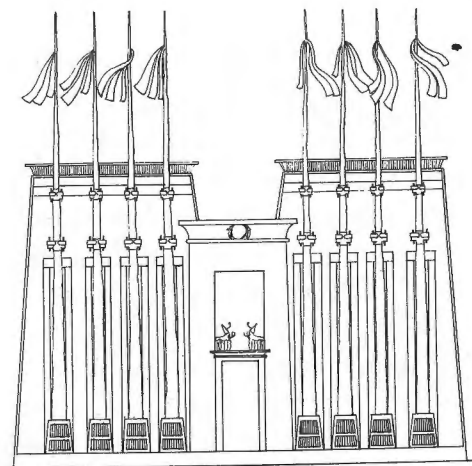
The drawings correspond exactly to the remains excavated.

THE SO-CALLED "SUN-SHADE" OF TIY. One drawing (Huya) represents a temple that does not seem to have been built. A portal leads into a first court bordered by a portico on bud papyriform columns which shades statuary groups of the pharaoh and queen. A great altar with a stairway rises in the middle.

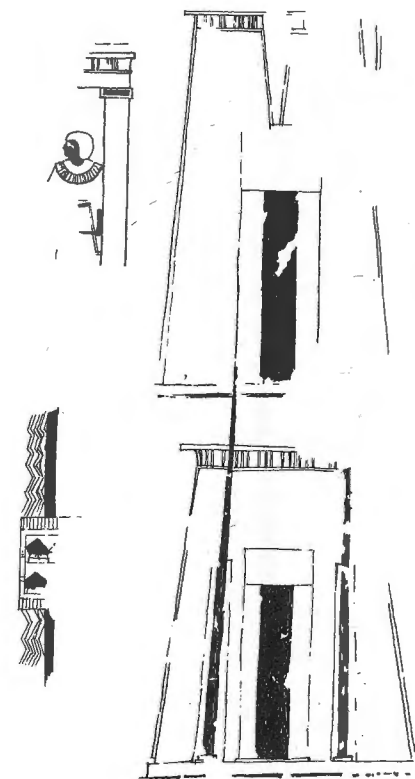
A second court, to which leads an alley bordered by two columned porticoes, contains a central enclosure flanked by two subsidiary courts on either side and a raised chapel in the rear.

THE PYLON OF THE THEBAN TEMPLE (EGYPTIAN *bekhen*).²²⁷ A series of representations of the pylons at Karnak or Luxor have been recorded in contemporaneous tombs or on the walls of the temples themselves. The main characteristic features common to all these representations are two towers with battered faces flanking a portal with a smaller doorway in its axis. Four flagstaffs (Egyptian *snwt*, "sisters" [?]) rise in front of each tower and are fixed at two levels by cantilever brackets and protected at the bottom by stone or wood gratings. The nature of the material of the flagstaff is occasionally indicated as a whole fir trunk. The walls are colored white, implying the use of stone or plastered brickwork, and the flagstaffs carry brilliantly colored flags (fig. 103).

103. Egyptian low relief representing the pylon of Herihor on the temple of Khonsu at Karnak.



104. Restored view of the device for fixing flagstaffs.

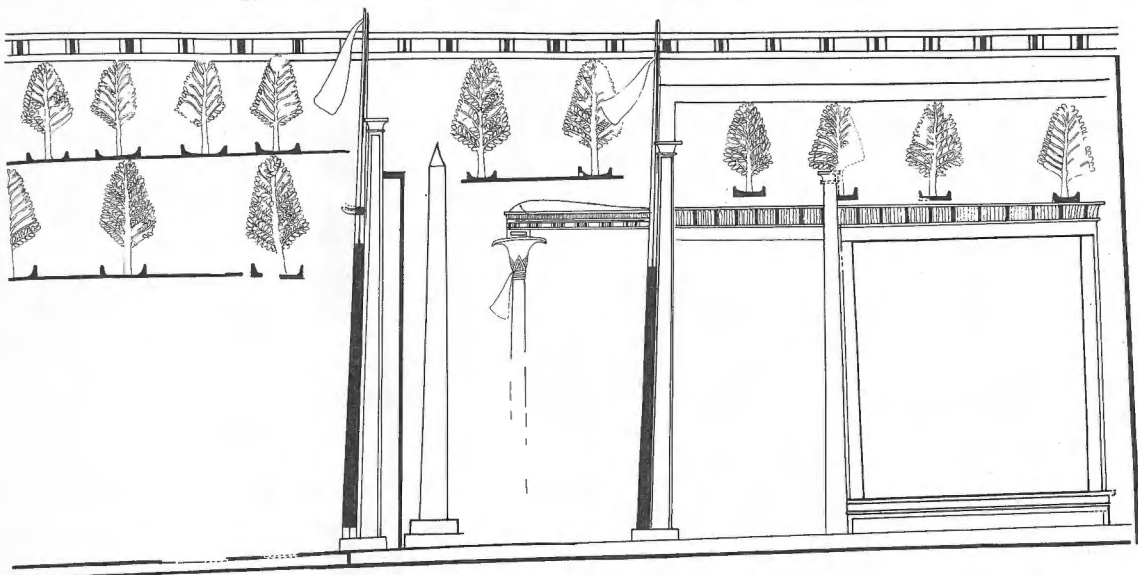


105. Painting representing the pylons of Theban chapels.

The drawings give valuable information for the restoration of the pylon in the Theban temple, especially as regards the flagstaffs, which have long since disappeared, leaving only the massive stone base and the sockets where the brackets had been engaged. It is interesting to notice that the angle of incline of the faces is greater in the drawings (82° – 85°) than in the actual pylons; there are also other minor discrepancies in the proportions (fig. 104).

THE PYLON OF THE THEBAN CHAPELS. Several drawings represent the pylons of chapels in the temple of Amun at Karnak or those of funerary chapels on the western bank. The type is constant and is derived from the façade of a primitive divine booth (Egyptian *sch*),²²⁸ rectangular with battered sides, crowned with a cornice, pierced with a central doorway and flanked on either side by a flagstaff, fixed vertically in a prismatic recess of the façade (fig. 105). In one drawing the façade is rectangular.

These pylons or portals, colored white in the scenes, were probably in brickwork, plastered and whitewashed (Deir el Medina).



106. Representation of the temple of Amun from the tomb of Neferhotep.

THE TEMPLES.²²⁹ A few paintings from Theban tombs represent various temples or chapels.

In two tombs (nos. 96, 324) a small chapel appears in the scene representing the house. It is erected near it and consists essentially of three contiguous rooms, probably shrines, as may be inferred from the statues they contain and the offerings placed in front of these. A court planted with trees and enclosed within a small wall occasionally stretches in front of the chapel.

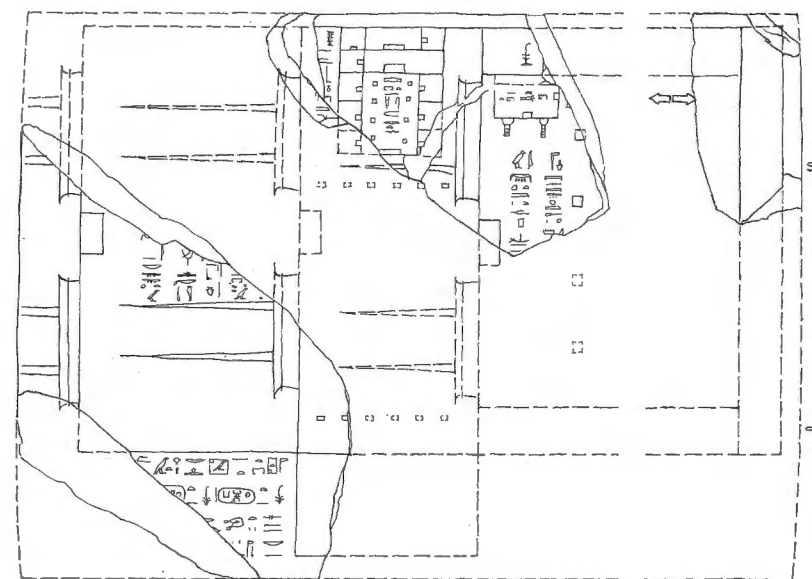
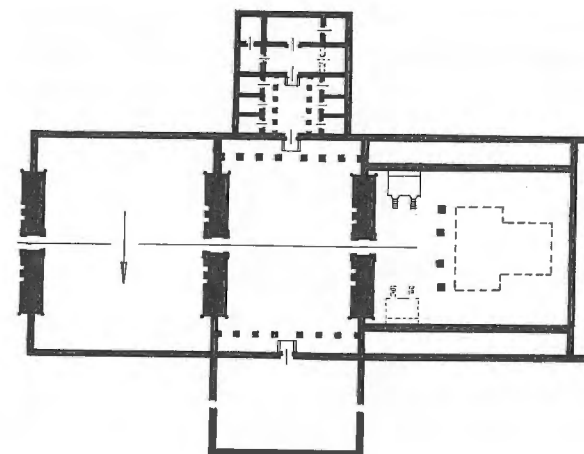
THE TEMPLE OF KARNAK (FROM THE TOMB OF NEFERHOTEP). This is a schematic representation of the side elevation of the rear part (Pylons III-V). Various errors in draftsmanship are to be noticed, such as the inclination of the external face only and the inclination of the flagstaffs, which are shown as if shifted outside their prismatic recesses. These errors result from the method of architectural drawing peculiar to the Egyptians. It is interesting, however, to note that a wooden porch on open papyriform columns stood abutting on Pylon IV and that trees were planted outside the buildings (fig. 106).

PLAN OF A TEMPLE AT HELIOPOLIS. On a stone slab the plan of a temple with informative text is carved, while an inventory of the temple is engraved on the back of the slab (fig. 107). Three transverse courts, each fronted with a pylon, are laid out on a longitudinal axis (E.-W.). In the middle court a

subsidiary temple stretches on either side behind a pillared portico. The south subsidiary temple consists of a pillared court bordered by three rooms on either side and two transverse courts, each having a room at either end. It is called by the text "The Chapel for the Erection of the Willow." In the third court a small chapel with two stairways ascending from the north is named "The House of Atum of the Sycamore."

This plan could be that of a solar temple with three open courtyards dedicated to Re'Horakhty, with a subsidiary temple of Hathor.

107. Egyptian plan of a temple at Heliopolis and its interpretation.

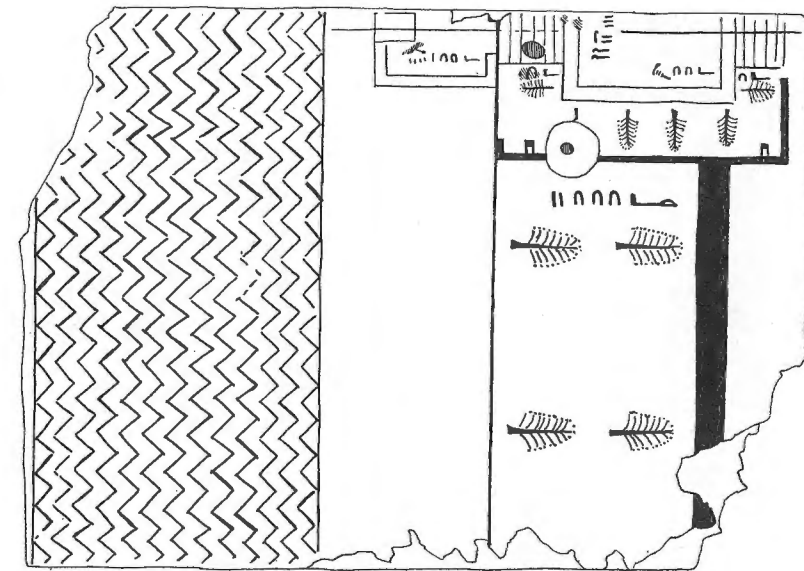


MODEL OF A TEMPLE OF RE'HORAKHTY-ATUM.²³⁰ Only the quartzite base of this unique model (now Brooklyn Museum Acc. no. 49.183) was found at Tell el Yahudiya. The socket holes for the pieces that were inset allow for the restoration of the design. Along three sides of the base are carved eight scenes of Seti I making offering to the sun gods and inscriptions describing some of the pieces of the model and their unusual materials: obelisks of graywacke, flagstaffs of stone, pylon of marble-like stone, and door of copper. Two sphinxes, probably the pair at the end of the processional avenue, two standing colossi, and two obelisks flank a broad stairway rising to a terrace where two smaller sphinxes mark the entrance façade consisting of a doorway with broken lintel between the two towers of a pylon with flagstaffs (color plate VII). Beyond there are two walls enclosing an area open to the sky. The model was to abut against a wall. It was not only an architectural model but must have served for rituals, perhaps that of the "presentation of the house to its lord" performed during the foundation of a temple before its construction, and again at its consecration.

THE LANDING QUAYS OF TEMPLES.²³¹ Since archaic times all temples had to be located on the Nile or on a canal connected to it, since traffic was mainly by waterways. Remains of such layouts have been recovered in many of the mortuary complexes of the Old Kingdom and in the temples at Luxor and Karnak. Two drawings give supplementary information concerning such landing quays at Thebes.

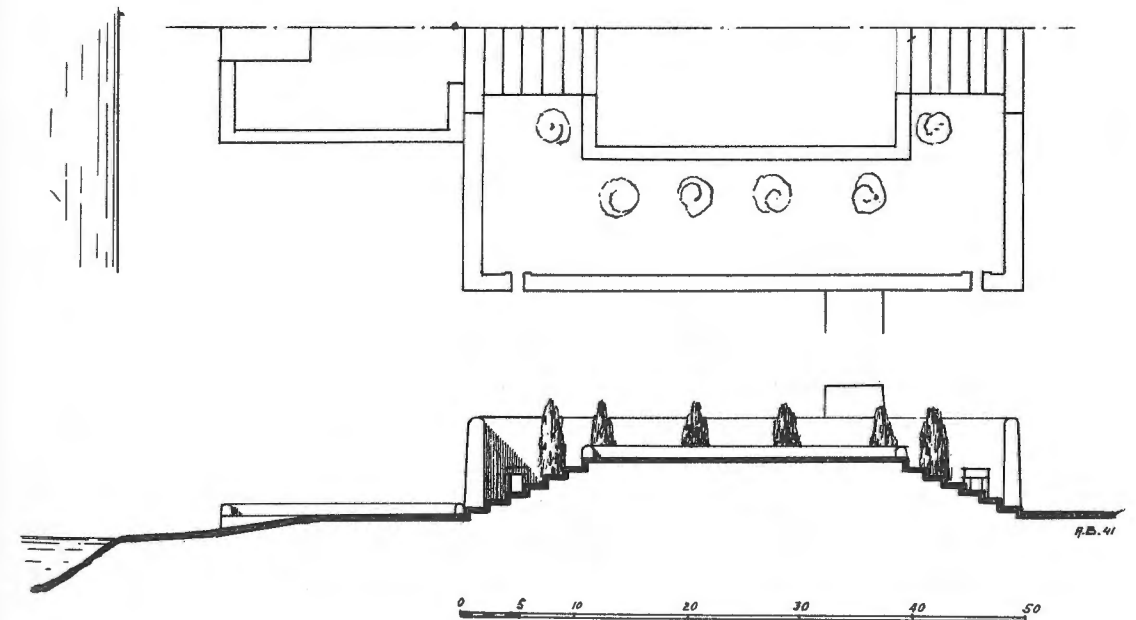
An architect's project (fig. 108) with dimensions can be interpreted as representing a landing platform on the bank of a watercourse, adjoining a garden surrounded by a wall and containing in its center a platform to which two stairways ascend at the front and the rear. A thick girdle wall, parallel to the bank, abuts on the enclosure. This landing quay could have served for some domain or temple (fig. 109).

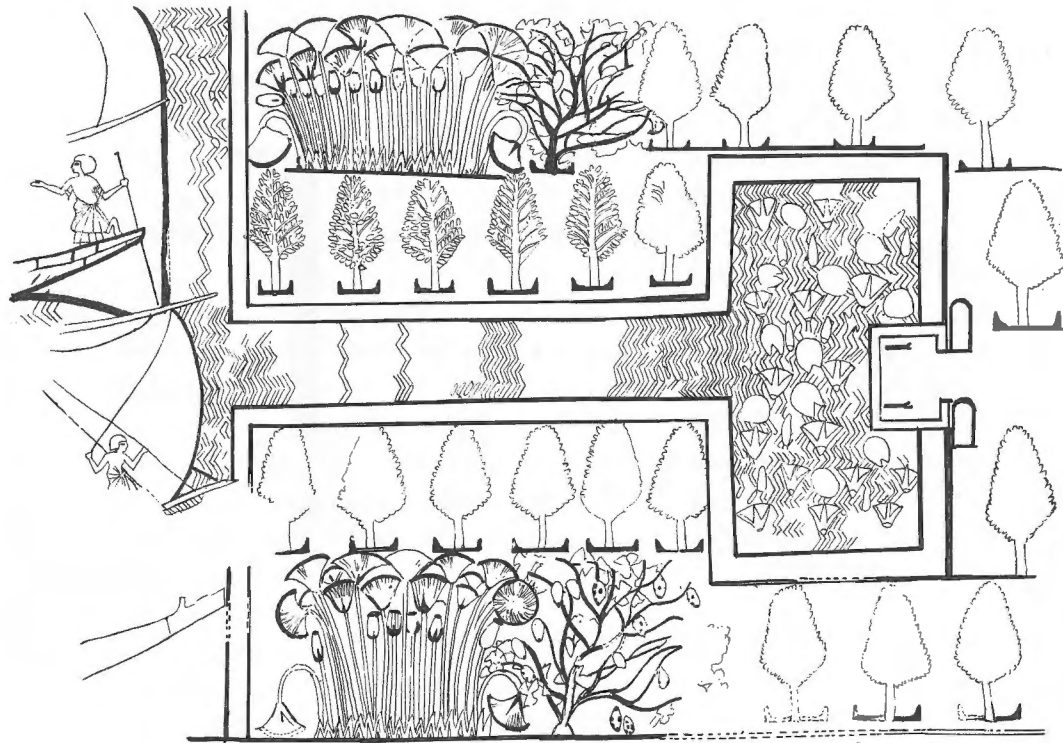
In the second representation the temple of Amun (Tomb of Neferhotep; see p. 172) is approached by a landing quay shown in detail. A secondary T-shaped watercourse branches off the main river and ends in a rectangular basin. In the center of the rear side a platform surrounded by a parapet projects into the water. A pole, shown rabatted, stands at either outer corner and a stela is erected on either side of the entrance to the temple (fig. 110). The two posts were probably to secure barks when they moored along the quay, or were they to carry an awning for shade?



108. Egyptian project for a landing quay at Thebes.

109. Restored plan and section of the project for a landing quay.





110. The approach and landing quay of the temple of Amun at Karnak as represented in the tomb of Neferhotep.

THE TYPICAL CULT TEMPLE IN THE NEW KINGDOM²³²

The cult temple, being the dwelling of a god (Egyptian *per*, "house"), presents the same essential elements as a palace adapted for the ritual of the cult. Since the Eighteenth Dynasty the cult temple has developed into a standard type which remains until the late Ptolemaic Period. The tripartite division, which rules the plan of a private dwelling or palace, is also conspicuous in the simple cult temple. That this basic division is often marred to a considerable extent is owing to the pharaohs' habit of enlarging the original project by duplicating various elements, such as a hypostyle hall, a pylon, a court, or an avenue of sphinxes or columns. This growth of a temple "by accretion" is probably best illustrated in the Great Temple at Karnak. Accordingly, an Egyptian cult

temple is often the result of continuous building and addition in front of an original kernel, not to mention the numerous restorations. Since the cult temple was the "house of the god," it was built, as the Egyptian texts put it, "with materials of eternity"—soft and hard stones.

The typical simple plan is best studied, however, in the two small temples built by Ramses III at Karnak (see fig. 135).

The three essential divisions of the plan, as adapted from those of the dwelling, are: the forecourt with pronaos, the hypostyle hall, and the sanctuary with its dependencies. One can readily set in parallel the forecourt with the courtyard of the house, the pronaos with the vestibule, the hypostyle hall with the broad hall, and the sanctuary with the deep hall and dependencies, where the master of the house actually lived.²³³ This gradual increase in the privacy of the apartments, beginning from the entrance doorway, is further enhanced by the upward slope of the floor and the lowering of the ceilings toward the rear of the temple. Corresponding to this is the gradually decreasing illumination, from the sunny porticoed court, to the pronaos, the hypostyle hall with its clerestory windows, and finally to the nearly total darkness of the sanctuary. Texts always speak of "ascending to the temple," perhaps an indication of this gradual rise in the floors of the various parts toward the naos, or because the whole building was at a higher level than the town. Access to the various parts was gradually restricted from the entrance onward to a decreasing number of worshippers who had to fulfill certain conditions.

Various rooms and magazines surround the shrine, where the statue of the god lived in a naos or in a bark. In the New Kingdom, when conquering the Empire, the outer walls of the temples were decorated with battle and victory scenes featuring the pharaoh as an invincible conquerer. Such scenes of epic character must have proved a successful means of political propaganda in a land where most of the inhabitants were illiterate.²³⁴

A girdle wall in brick, usually rectangular in plan, sometimes surrounds the sacred precincts as an enclosure and a defense, and is entered through one stone gateway in the axis of the plan (fig. 229).

THE PYLON (EGYPTIAN *beḳhen*). Since the Middle Kingdom, the façade of the temple assumes the shape of a pylon, consisting of two large towers on a rectangular plan, with battered faces crowned with torus and cornice and

flanking a lower central gateway, itself crowned with a cornice with a winged disk of the sun represented in relief. The remains of pylons and the numerous contemporaneous representations allow us to reconstitute their original aspect fairly accurately. They were built mostly of stone, sometimes also of brick, and profusely decorated with scenes in painted sunk low relief, representing the pharaoh slaying enemies. They had many stories and one or two staircases rose to the top of the central gateway and farther up. Often, wooden flagstaffs taller than the pylon and described by the texts as being of cedar were erected in front of it inside prismatic recesses in the battered faces and held vertically upon a stone base by wooden or stone brackets protruding from the upper part of the wall. Colored banners floated gaily at the top. These flagstaffs occupied a similar position as, and perhaps originated from, the two flagpoles shown at the front of primitive shrines on the archaic labels.²³⁵ A grating protected the bottom of the flagstaffs, which were set symmetrically (one to four in front of each tower). Graphical evidence suggests that at 'Amarna the faces of the pylons could have been vertical.

The architectural treatment of the pylon, with its battered faces, its torus running along its edges and its cornice, points to an early prototype constructed in plant stalks and mud. Although the pylon does not appear in its stereotyped form before the New Kingdom, its basic design consisting of two massive towers flanking an entrance bay is known from the Old Kingdom.²³⁶ It occurs in the front façades of the mastabas, of the valley temples, of fortified walls, and of the royal palace. It has even been suggested that it could be recognized in the double cabins flanking the central entrance-awning of archaic boats.

According to Egyptian texts the pylon is the "Luminous Mountain Horizon of Heaven," this latter being represented in hieroglyphs as two mountain peaks between which the sun rises. This name could therefore imply that the sun or deity appears from the entrance doorway of the pylon.²³⁷ A figure of the deity was actually worked in metal on the wooden leaves of the door so that it might appear as if coming forth from the temple.

Paired colossal statues of the pharaoh, abutting on the external face of the pylon and obelisks, were sometimes erected to protect the entrance. An alley of sphinxes, man- or ram-headed (crio-sphinx), called the "Way of God" could also lead from one temple to another or simply from the landing quay or a tribune to the gateway of the girdle wall and to the pylons.

A paved way or dromos could extend from a landing place or chapel to the pylon. The sacred statue or bark was carried processionally along the alley of sphinxes and dromos to the landing quay, whence it might journey by boat to another temple.

The treatment of an entrance façade consisting of two massive towers flanking the doorway and protecting it was also known in Mesopotamian architecture.

THE FORECOURT (EGYPTIAN *wba*, "OPEN COURT"). Behind the pylon a court, usually of the same width as the hypostyle hall and on a rectangular plan, is bordered on one or more of its sides with a portico on columns or pillars, with abutting Osiride statues of the pharaoh (Nineteenth Dynasty). In this court was a great altar for the offerings, usually on one side of the axis (Medamud). In the earliest temples the portico stretched only in front of the rear wall of the court, upon a raised platform (Seti I at Abydos) reached through a ramp. The scenes on the walls, in painted low relief, sunk, represent the pharaoh in various historical or religious activities, leading military expeditions for the benefit of the deity, worshiping the gods, and playing his part in festivals or in foundation ceremonies. Nothing of the divine mysteries is revealed in these scenes which were to be seen by the populace.

Sometimes at the rear of the court stands a high portico with one or two rows of columns and pillars and partly closed by screen walls on its façade. This marks the frontage of the temple proper.

THE HYPOSTYLE HALL (EGYPTIAN *wadjet*, "HALL OF POPYRIFORM COLUMNS"). A hall set transversely to the longitudinal axis and stretching along the whole width corresponds to the broad hall of the contemporary domestic architecture. A similar element can be recognized in the foretemple of the royal mortuary complex in the Old Kingdom.²³⁸ In the Nineteenth Dynasty a characteristic feature of the hypostyle hall is the arrangement of its columns so that a central nave is bordered by two rows of high papyriform open columns, while the aisles have shorter columns, usually of the bud papyriform type. A row of clerestory windows with gratings set between the ceilings lets in the light. The striking similarity of this type of hypostyle hall with the Roman basilica has been pointed out, and it has been suggested that a direct connection between it and the "Egyptian Hall," as it was called by Vitruvius (VI. 5), and the Roman basilica could be considered.²³⁹

The scenes on the walls are different from those in the forepart of the temple. They represent the ceremonies that were probably held there, such as jubilees and processions of the sacred bark. The pharaoh, who had been represented completely dressed in the forecourts, now wears a short kilt as he approaches the deity. This dress conforms to a religious ritual reminiscent of a similar one in Mesopotamia. Often, especially in the Nineteenth Dynasty, as many as three secondary hypostyle halls were added beyond the main one. From their names one may grasp an idea of the types of ritual ceremonies performed in each one: "hall of appearance" (*wsekhet kha'it*), "hall of offering" (*wsekhet hetep*), "intermediate hall" (*herit ib*).

THE SANCTUARY. At the rear of the temple is the private abode of the deity, a deep and narrow room containing the naos or the sacred bark. The cult statue was a small wooden figure, often plated with gold and kept in a naos behind sealed doors. It was waited upon thrice a day by the pharaoh or by the priest delegated to represent him, "the servant of god" (*hem netjer*). In the New Kingdom the naos was often placed on a sacred bark set on a stand and was carried shrouded in procession by the priests on festivals to a repository in the vicinity or to a secondary temple. On this account a second doorway had to be opened in the rear wall of the sanctuary and the latter became a bark-chapel. Often there is a bark-chapel in front of the usual type of rear sanctuary. Sometimes a small hall on a square or deep plan is set contiguous to the sanctuary and was used as the "deep hall" or living room was in the domestic program. The hallowed mystery of the sanctuary is such that before the Twenty-Second Dynasty no name appears to designate it. Here also numerous rooms (storerooms, staircases) surround the sanctuary. If the temple is dedicated to more than one deity two or more shrines are placed side by side flanking the central one. In the temple of Khonsu (Ramses III) at Karnak the sanctuary appears for the first time as an independent bark-chapel similar to that of the peripteral temples. In all these rooms the walls and columns are covered with low-relief scenes representing the rites that were performed in them or the items they contained.

Adjoining the temple buildings was a room or court (*sekhw wa'b*, "pure court") for the slaughter of animals presented as offerings (slaughter-court). A sacred lake was sometimes dug in the vicinity of the temple within its temenos wall on a rectangular or U-shaped plan (temple of Mut at Karnak),

with retaining walls lining its sides and stairways descending in its corners. It was filled by the infiltration of subsoil water. Boats were sailed on it during the festivals when sacred mysteries such as those of Osiris were performed, and in it the priests made their ritual ablutions four times daily.

THE FUNCTION OF THE TEMPLE FROM ITS WALL SCENES

The temple is intrinsically the "house of god" and not a gathering place for a congregation. The people (*rekhyt*) have access to its courts and occasionally to its hypostyle hall to hail the bark of the god on certain festivals or the newly crowned pharaoh.²⁴⁰ Its main purpose is described in its wall scenes and inscriptions representing the various rites performed within the corresponding rooms for the daily ritual or during the procession of the bark or the crowning of the pharaoh. As before in the tombs and temples of the Old Kingdom the activities depicted could eventually become real through religious magic.

The nucleus of the temple is the rear sanctuary or naos containing the cult statue placed from the time of Amenhotep III in the axis of the plan. Its scenes depict the daily ritual performed for the statue and for the offering ritual, but they never give the name of the sanctuary nor show the statue itself, described as being "more mysterious than what is in heaven." The sacred bark placed on a stand in its long narrow room in front of the sanctuary as shown on its walls does, however, appear carried out in solemn procession. This is the typical scene covering the whole wall, but in some bark rooms the walls are subdivided in two or three registers representing the king at the offering-table, before the bark, and among the gods. In front of these private apartments of the god was an axial "central room" (*wsekhet herit ib*) where food and various offerings were presented by Pharaoh to the gods as depicted in its wall scenes.

According to the wall scenes in rooms in the vicinity of some sanctuaries these rooms could be dedicated to the funerary offering ritual for the king and might feature a false-door and a scene of the king at the funerary repast or, more often, that of Amun; or they could be dedicated to the cult of the royal statues, or might be chapels for the ritual of purification, the so-called "Baptism of Pharaoh."

The small rooms round the rear part of the temple can also be defined from their wall scenes as rooms dedicated to deities associated with the god of the temple, magazines for unguents and equipment, treasuries (*per hedj*, "house of silver"), and slaughter areas, usually a court decorated with scenes of the ritual sacrifice or the preparation of the cattle.

The larger part of the temple is designed for the festivals and consists of the hall of appearance (*wsekhet kha'it*) and the feast court(s) (*wsekhet hebit*). The hall of appearance is the hypostyle hall where the sacred bark proceeds and rests during festivals to receive offering, and where the pharaoh is crowned. These themes form the subjects of the wall scenes, to which are occasionally added those of the birth of Pharaoh and of the foundation ceremonies whose relevance in the context of the scenes is substantiated by the fact that they form part of the story of the temple and its founder, the pharaoh. On the walls of the court are episodes from the feasts of the gods, their processions, the *Heb-sed*, and crowning cycles set above a plinth decorated with offering bearers or so-called Niles personifying the nomes, and a frieze of lapwings representing the people (*rekhyt*). Here the greater variety in theme marked by the virtual absence of those of ritual allows for greater artistic freedom and development. This accounts for the intrusion of scenes of war and the triumph of Pharaoh from the external walls onto those of the court.

Though most of the wall scenes represent activities or rites performed within that room some do refer to the function of rooms in the vicinity. All, however, are marked with the kinetic opposition of the performers striding in toward the god who strides out, giving to the whole composition an eternal dynamism focused on the naos which is enhanced by the contrast of moving light and shade that enliven an already vivid coloring and gilding. For the abode of the god is a model of the world and of the primeval hill emerging out of the primeval waters of the Nun.²⁴¹ On a background of columns rising above papyrus thickets that conceal the lower part of the columns and the walls, gods, kings, and men meet beneath the blue sky sprinkled with golden stars of the ceiling. The gradual rise in the floors in conjunction with the lowering height of the ceilings and the dynamic focusing toward the rear express architectonically the fact that the naos is the "heaven" described by inscriptions. This ultimate object of the design of the typical cult temple of the Empire can also be deduced from the diagram of harmonic analysis of its plan²⁴² where the location of the bark-chapel or the naos coincides with the

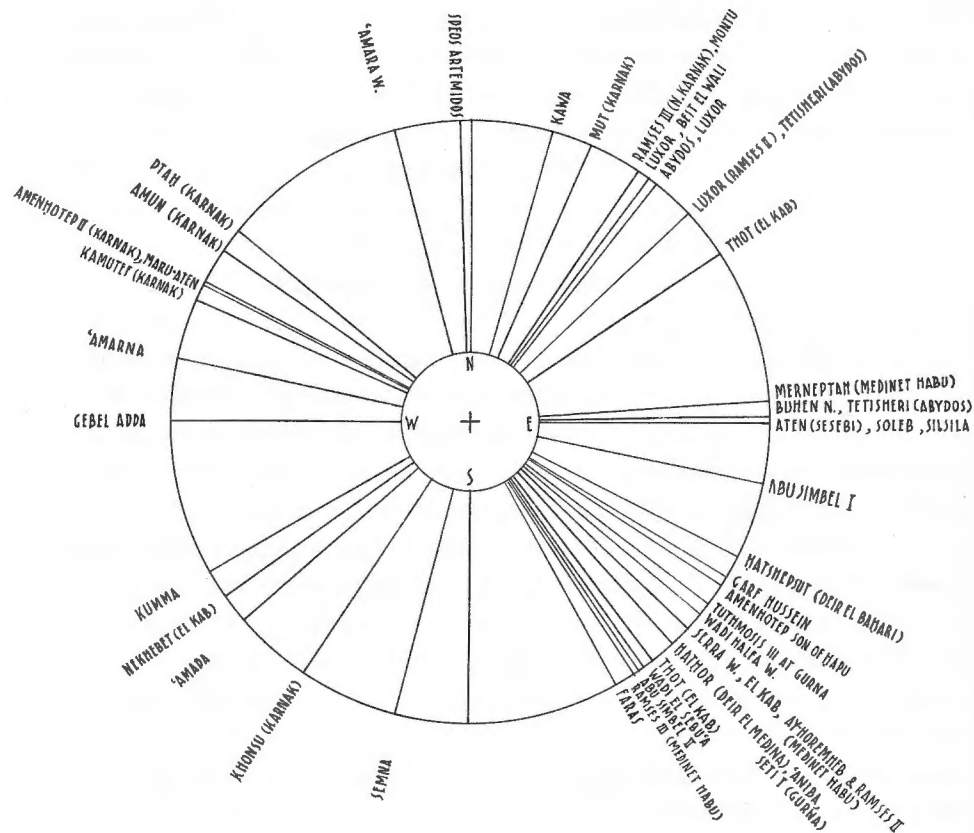
top of a prismatic pillar rabatted, its base aligned with the entrance façade. It appears that the Egyptian architect used his device of the rabatement in a horizontal plane to unite heaven and earth, a feat his Mesopotamian colleague strove to achieve in a vertical plane with his ziqurrat, "the high one" or "pointed one," topped with its chapel, abode of the god.

THE ORIENTATION OF TEMPLES

The ideal orientation to the east, which had prevailed in most of the temples built in the desert during the Old Kingdom, is seldom found in the New Kingdom. Nearly all the remains from the Old Kingdom are those of mortuary temples, sun temples, or the unique Sphinx temple at Giza, which must all be symbolically connected with the east where the sun rises. Only two other temples dating back to the earliest times, the archaic temple of Khentiamentiw at Abydos²⁴³ and the temple at Medamud,²⁴⁴ seem to be oriented north.

Whenever a temple was not located in a desert area where nothing could interfere with an ideal orientation, several factors come to play a prominent role. These can all be brought into relation with traffic considerations or symbolic implication. In Egypt the Nile or its canals have always been used as natural ways of communication, and temples as well as cities were built along them. This importance is pictured in the Egyptian terms "to sail downstream" for traveling northward, and "to sail upstream" for traveling south. For some aesthetic reason later recognized as valid by Vitruvius a temple had to be laid out on an axis perpendicular to the bank of the watercourse on which it was located. The reason could perhaps be that such an approach featuring a landing quay aligned along the waterbank and a processional avenue perpendicular to the latter but in the axis of the temple was the only rational solution that the Egyptian architect could devise in conformity with symmetry. A landing quay aligned along the waterbank would be less liable to the erosive action of the current or to silt-deposition. According to the Egyptian scenes representing landing quays, whenever a building was located at the dead end of a watercourse, a rectangular mooring basin was laid out transversely to the axis of the temple and the watercourse; so that the quay could assume the same setting transverse to the axis.

During the Old Kingdom the articulate layout of the mortuary or sun



III. Diagram showing the orientations of temples during the Empire.

temples built on a desert plateau, with the long inclined causeway connecting the upper funerary temple, itself facing east, and the lower portal in the valley, allowed for some adjustment. Usually, the valley portal also faced east, while the causeway ran at an oblique angle following some natural feature of the site. Sometimes the portal assumed another orientation, presumably in relation with some existing watercourse (sun temple of Neuserre', mortuary temple of Sahure', of Neuserre', of Pepi II). But in the later temples built near the river there was no such flexibility and the layout on an axis perpendicular to the waterbank prevailed against the ideal orientation to the east.

From the diagram featuring the various orientations of the longitudinal axes of the temples between the Eighteenth and the Twentieth dynasties there

seem to be some predominant directions (fig. III). Yet this impression is only superficial, and the prevailing southeast direction is due to the fact that the majority of the temples studied are in Western Thebes. Needless to say, such a diagram can be only an approximation on account of the discrepancies resulting from inaccurate surveys of the monuments. An examination of the conditions underlying such contradictory directions as N.E. and S.W. or N.W. and S.E. has led to some basic arguments that can explain all cases:

1. In independent locations where the temple is not connected to a waterway, such as temples in the desert or rock-cut temples, a deliberately cosmic orientation to the west seems to be avoided. Only one temple—a small rock-cut chapel to Thot in the eastern cliff at Gebel Adda (Lower Nubia, Nineteenth Dynasty)—faces west. The direction of the setting sun and the netherworld could hardly be expected to be a favorite. Later cultures such as the Etruscan and the Roman considered the west unlucky.

2. Rock-cut temples have to comply with the conditions of their setting, and their axis is perpendicular to the façade dressed in the rock cliff. Usually, they are located in Lower Nubia on the west bank of the Nile (except Speos Artemidos in Middle Egypt) and accordingly they face eastward (Beit el Wali N.E.; Abu Simbel E. and S.E.).

3. Most of the Theban mortuary temples face S.E., as they are set perpendicularly to the riverbank (N.E.). Some scholars hold the opinion that they are oriented toward Luxor, as their main element is always a temple to Amun.

4. A general empirical rule is that the temple fronts an approach perpendicular to the riverbank. The varying downstream direction has been rather inadequately called "local North" by Egyptologists. As the river meanders along its 1,000-kilometer course in Egypt, sometimes following such directions as S., S.W., or W., temples are liable to assume contradictory orientations. This is most easily recognizable in Nubia (S.W. for 'Amada, Semna, Kumma, 'Amara West). Even the large complex at Karnak is oriented N.W. The same rule holds for the temples on canals. The temple at Abydos (Seti I) is oriented N.E., probably on account of its connection with the canal El Kasra.

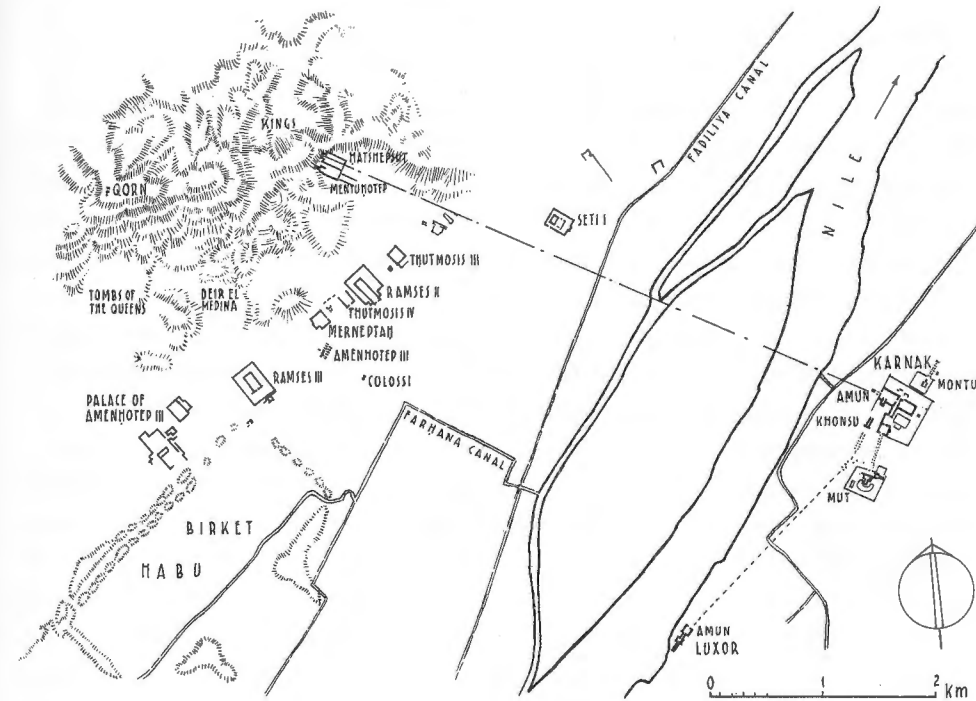
5. When there is no watercourse near a large complex the internal layout is governed by a similar rule. Temples are then set perpendicularly to the main street. At 'Amarna the Great Temple and sanctuary are perpendicular to the Royal Road. At Karnak the small temples tributary to the Great Temple of Amun are perpendicular to the axis of the latter (S.W. for Seti III; N.E. for

Ramses III). Peripteral chapels, used as repositories for the boat or statue of a god, can be set on the same axis as his temple, on the opposite side of a processional avenue, but oriented in the opposite direction (Kamutef at Karnak). Sometimes these chapels are at right angles to the main temple and near its front (Maru-Aten at 'Amarna).

6. These interrelations between temples, expressed graphically in the general layout, could assume a large scale and govern temples built at great distances from one another. The Theban district affords an excellent example (fig. 112). Three of its temple complexes are set in relation to one another, while the supremacy is left to the Great Temple of Amun-Re' at Karnak. The latter is the symbolic focus toward which the neighboring temple of Mut is oriented and to which it is connected by a monumental approach. Even the distant mortuary temple of Hatshepsut (see color plate XI), on the western bank across the Nile, is oriented toward it, as was the earlier mortuary temple of Mentuhotep and, indeed, the cirque itself known as "Opposite the Face of Her Lord," a name subsequently given to the whole Theban necropolis. At Luxor the temple was originally built parallel to the river, but during the building process its longitudinal axis was gradually curved to orient toward the temple of Amun at Karnak. The long processional avenue bordered by sphinxes leads from the court of Ramses II at Luxor, set askew to the curved axis of the Eighteenth Dynasty temple, to the temple of Khonsu (S.W.) along the enclosure of Amun at Karnak. The interrelated layout scheme of the three temples of Amun, Mut, and Khonsu at Karnak is presumably meant to meet the requirements of the rites observed during the yearly visit made by Amun of Karnak to Luxor. As early as the Twelfth Dynasty Amun also crossed every year to the western bank to visit the temple of Mentuhotep at Deir el Bahari.²⁴⁵ It is noteworthy that such extensive layouts of several temples connected by some ritual were also known in Mesopotamia.²⁴⁶

In such a layout as that of Luxor, where the small chapel of Thutmose III faces the temple built later by Amenhotep III, one can deduce that the approach must have featured a processional avenue leading from the Nile quay to the site, later built up by Ramses II as a walled-in court surrounded by a colonnade.

In Rome there must have been an ideal orientation, probably E.-W., but the actual examples, as in Egypt, show considerable variations (S.E.-N.W., S.W.-N.E.).²⁴⁷ This variation is also due to the local environment. Cicero²⁴⁸



112. Map of Thebes showing the interrelated orientations of Deir el Bahari and Luxor toward Karnak.

records that the Etruscan haruspices advised in 65 B.C. that the fallen statue of Jupiter on the Capitol be reerected in the direction of the east, so that it could see over the Forum toward the political center of the city. In this connection Vitruvius (IV.5, 2) seems to believe that a normal orientation for a temple along the Nile was perpendicular to the river: "Also if a sacred temple is raised along the riverside, as by the Nile in Egypt, it ought to seem to regard the banks of the river."²⁴⁹

THE SOLAR ORIENTATION. There is undeniable evidence that some types of temples are definitely oriented in connection with the sunrise. In the Old Kingdom the sun temple was laid out on an E.-W. axis, with the altar, chapel, and other cult elements in the eastern court. Similarly, both the funerary and the valley temple of the pyramids after the Third Dynasty faced east, though they usually had to be connected by a causeway running askew on account of

the topographical conditions of the terrain.

It was to be expected that the solar temples and chapels built by Akhenaten in the Eighteenth Dynasty would also be oriented in connection with the sun. As a matter of fact, all his temples, whether at 'Amarna or elsewhere (Sesebi), fronted east, except perhaps the Maru-Aten, which was nevertheless laid out along an E.-W. longitudinal axis. The kernel of the temple was the altar, consisting of a square platform to which a stairway ascended from the west (see p. 201), so that the worshiper would face the rising sun when offering. In the private chapels in the estates at 'Amarna the basic element was also such an altar set within a hypaethral structure. The stairway ascended from the west (house of Hatiay), but also from the east (T.36.36; H.O.49.2.3). Numerous representations of both altar and hypaethral chapel in scenes from contemporaneous tombs allow a pretty accurate restoration of both types. A few chapels had stairways ascending from the south (North Palace and King's House at 'Amarna), and the desert altars east of the North Suburb were not oriented eastward.

In the mortuary temples at Thebes there was a court located north of the sanctuary of Amun, with an altar dedicated to Re'Horakhty. A stairway ascended from the west (Hatshepsut, Seti I, Ramses II, Merneptah, Ramses III). The rock-cut temple dedicated to Re'Horakhty by Ramses II at Abu Simbel had an altar court to the north of its façade, with a stairway ascending from the west and facing sunrise behind two pseudo-pylons. In general the area of solar worship in a temple of Amun was located to the right of the axis when looking from the front toward the sanctuary. A further good example would be the one at Karnak where the area is marked by the colossal statue of a scarab on a stand, north of the Sacred Lake.²⁵⁰

THE THEORY OF THE STELLAR ORIENTATION. It has been presumed, on the basis of a few foundation texts in the temples of the Greco-Roman Period (Edfu, Esna, Dendera), that the orientation of the main axis of a temple was toward various stars. There is indeed an earlier text from the reign of Thutmose III mentioning that the pharaoh "awaited the day of the New Moon."²⁵¹ for the foundation ceremony. Both temples at Edfu and Dendera, where the texts mention the Great Bear stars as one pole of the axis, have exceptionally a N.-S. orientation, with a N.N.E. front at Dendera and a south one at Edfu. The theory of the stellar orientation, propounded mainly by Nissen,²⁵² maintains

that the azimuth of important stars shows the direction of the temples whose gods are connected to these stars. Though we are sure that the tombs from the Archaic Period and the Old Kingdom were oriented with their entrance ramps toward the north, as indicated by the contemporary polar star, accurate evidence as to a stellar orientation for temples of the New Kingdom is still inchoate.

On the other hand, the evidence for an orientation toward sunrise for the sun temples, or perpendicularly to the riverbank for cult temples, seems to be convincing. The orientation of some Theban sanctuaries toward the Great Temple of Amun at Karnak, which is basically a symbolic one, is also a proved fact. As has been brought forward by Nissen, the rite of the Jews to turn for prayer toward Jerusalem and of the Muslims toward Mecca forms a striking parallel to the orientation of an Egyptian temple at Thebes symbolically toward the Great Temple of Amun.

TYPICAL EXAMPLES OF CULT TEMPLES

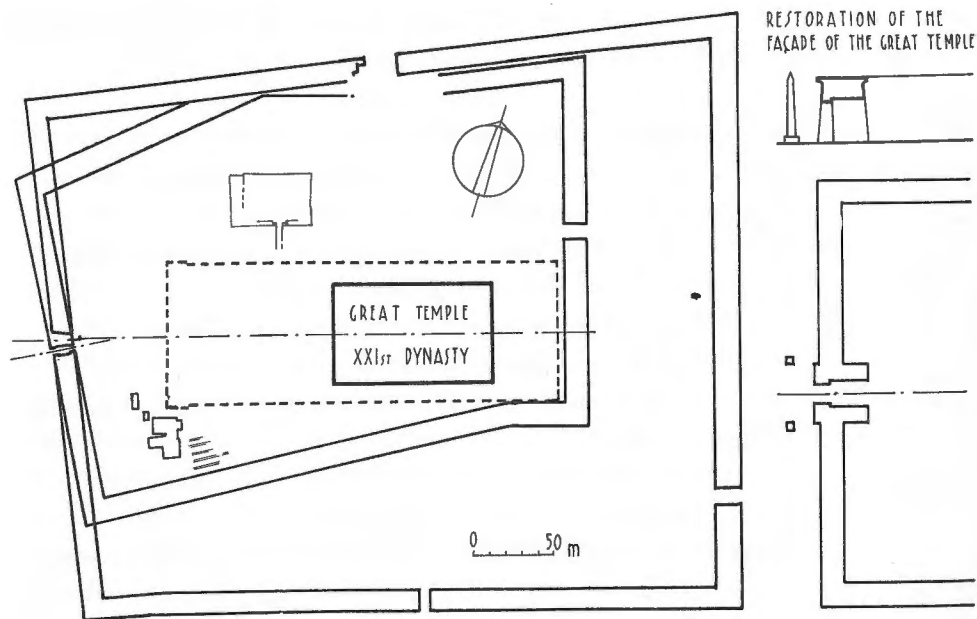
THE TEMPLES AT PI-RA'MESSE (ARABIC, SAN EL HAGAR). Pi-Ra'messe, the Delta Residence of Ramses II at Tanis, was extraordinarily rich in temples: the Great Temple, the Northern Temple, and *extra-muros* the temple of Anta.

THE GREAT TEMPLE. Ramses II built a temple on the remains of an earlier one dedicated to Seth of Avaris (?), reusing materials from the ruins. Reports of ancient travelers point to the large number of obelisks on the site, a fact quite in accordance with the numerous jubilee festivals that Ramses II celebrated, probably as many as fourteen.²⁵³ Remains of more than twenty-five obelisks have actually been found. Some of these are monuments from the Middle Kingdom or even from the Old Kingdom reused by Ramses II. They were probably erected in pairs in front of the successive gates of the temple on both sides of the longitudinal axis, and the location of their bases helps to supplement the somewhat deficient information yielded by the foundation walls, the only remnants of the monument.

Ramses II erected a colonnade, using the palmiform granite columns (10.95 m. high; 1.43 m. diam.) from the Old Kingdom temple and inscribing them with his own titulary and figure.²⁵⁴ This colonnade on both sides of a

paved avenue forms a monumental approach to the western façade of the temple, marked by Pylon I. Such an arrangement was commonly used in other cult temples at that time. The plan is a long rectangle (W.-E., 250 x 80 m.) bounded to the north and to the south by limestone walls 4.5 meters thick, themselves abutting on earlier brick walls from the Hyksos or the Middle Kingdom²⁵⁵ and divided transversely by three pylons into two courts, a hypostyle hall, and a sanctuary (fig. 113). The location of the pylons can be surmised on account of the large obelisks (13-18 m. high) flanking their gates and fallen near their bases. These red granite obelisks are exquisitely carved, and their inscriptions in a vertical column along each of the four faces have their hieroglyphs directed toward the longitudinal axis of the temple (on the eastern and western faces) or toward its rear (on the northern and southern faces). In the second court four sandstone statues (8 m. high) represented Ramses II standing, and they were probably set along the eastern face (interior) of Pylon II. Between Pylon III and the sanctuary, the area of the earliest temple, one can surmise the existence of a columned portico and a hypostyle hall (of smaller breadth). According to the inscription upon a lintel, some

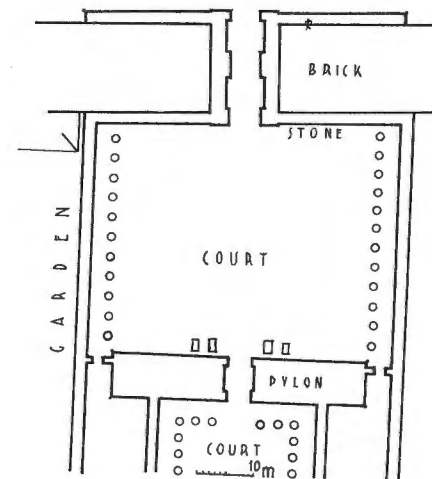
113. Layout of Tanis.



successor of Ramses II erected a large temple of limestone to the north of the jubilee chapels of that pharaoh. These chapels could have stood to the west of Pylon III. The sanctuary itself is in a ruinous state, especially since Psusennes and Siamen razed to build it again. The granite walls were decorated with three registers of scenes representing Ramses II, and they were roofed over with a large monolithic slab inscribed with one line. Small reused obelisks with dovetailed apex and palmiform columns had stood in the vicinity.

THE NORTHERN TEMPLE. It has been surmised that the "limestone building" named in the inscription mentioned above was the Northern Temple and that it was built by Ramses VI²⁵⁶ and destroyed in the troubled period at the end of the Twentieth Dynasty. Its plan stretched along an axis set transversely to that of the Great Temple, to which the northern gateway gave access (fig. 114). On both sides of the latter the inner face of the great girdle wall was found to present for some length a rough brickwork surface, which suggests that it was lined with limestone. To the west and east of the court, behind the girdle wall, were the walls of a portico running possibly along the inner face of the girdle wall. The northern gateway dated back to the same time as the girdle wall of Pi-Ra'messe in which it opened, and accordingly the court itself was also built by Ramses II. In the time of that pharaoh the general plan of this temple connected by an avenue to the side of the Great Temple could have offered

114. Restored plan of the Northern Temple at Tanis.

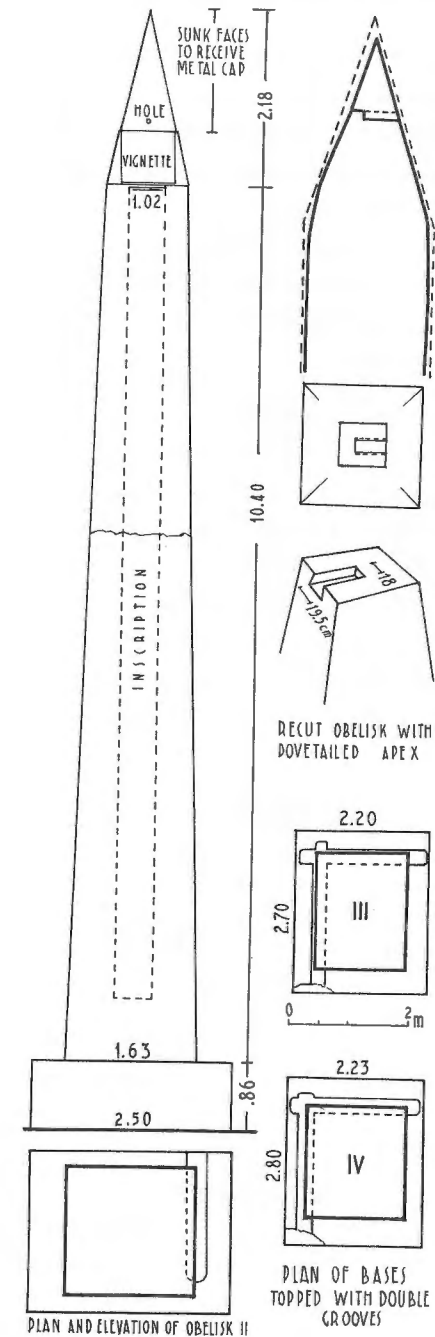


some similarity with that of the temple of Amun at Karnak.²⁵⁷ Later, the temple proper was built behind a pylon bordering the court to the south. Its rear walls abutted on those of the Great Temple.²⁵⁸

THE TEMPLE OF ANTA.²⁵⁹ To the southwest of the great girdle wall lies the temple dedicated to the Asiatic goddess Anta. Its axis is nearly perpendicular to that of the Great Temple. The bulk of the remains date from the time of Siamen, but this pharaoh rebuilt the temple on the foundations of a larger temple of Ramses II and Ramses III. The foundations (14 m. wide) reached down below the subsoil water level. A monumental gateway opened to the north, resting on a thick layer of sand (5 m. thick), encased within brick walls (N., S.). A vestibule with statues of Ramses seated or standing with Anta formed an approach to the temple. Nothing of the latter remains except perhaps statues of Ramses II and reused palmiform columns of the same type as those of the Great Temple.

THE OBELISKS AT PI-RA'MESSE.²⁶⁰ At least ten of the larger red granite obelisks were originally erected by Ramses II in front of the pylons of the Great Temple. They stood in pairs, flanking the portals. Their heights vary (about 10.44 plus 2.05 m. [Ob. X]; 15.10 plus 1.12 m. plus x [Ob. IV]), the first figure indicating the height of the shaft itself, the second that of the pyramidion). They are square or rectangular in section. All of them have bases of a rectangular plan, larger than the bottom of the obelisk so that a ledge is left between both (fig. 115). The width of this ledge is not necessarily the same on adjacent sides (Ob. V, 0.415 and 0.225 m.). The upper face of the base is cut with a simple groove reaching to one of the longer sides (II, X), or reaching from one side to the side opposite (V, IX), or a groove on an angular plan (III, IV). Some bases are without any groove (I, VIII). These grooves were to direct the lower edge of the obelisk as it was being lowered into position. Some of the obelisks have had pieces of sheet iron placed in ancient times under one side to help in their adjustment.²⁶¹ The height of the base varies between about 0.80 meter (V) and 1.25 meters (IV), and does not seem to be proportionate to the width or the length. The slope of the faces of the pyramidion varies, some being rather tapered with receding areas around the apex to allow for affixing a metal cap (VI, VII, XI), sometimes by means of a dowel pin (II).

There is no doubt that the obelisk was connected with the sun, and here at Pi-Ra'messe, with the sun god of Heliopolis.²⁶² A vertical column of inscrip-



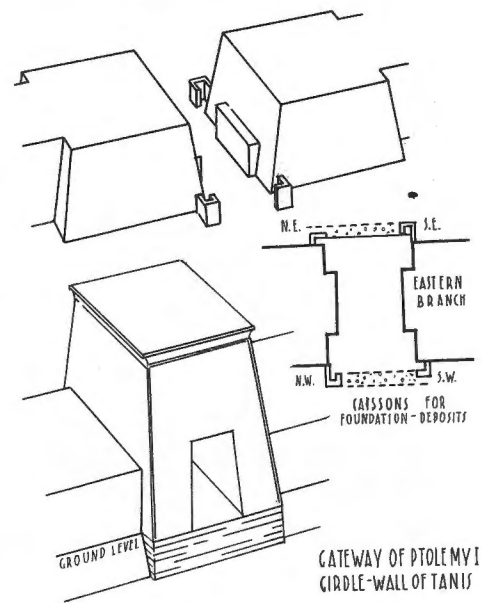
115. Plan, elevation, and details of obelisks at Tanis.

tions in beautiful hieroglyphs runs along each face. The text gives the titulary of Ramses II and boasts of his valor in the battles against the Asiatics. The deities most often mentioned are Seth, Montu, and Anta, all of Asiatic connotation. Even the figures of speech, such as the comparison of Ramses II to a lion or a bull, have a Semitic flavor.

It is noteworthy that Ramses II, who usurped so many monuments, was so afraid of being deprived of his own by his successors that he caused his name to be engraved on the bottom face of the obelisks out of reach of any impious hand (Obs. VI, VII).

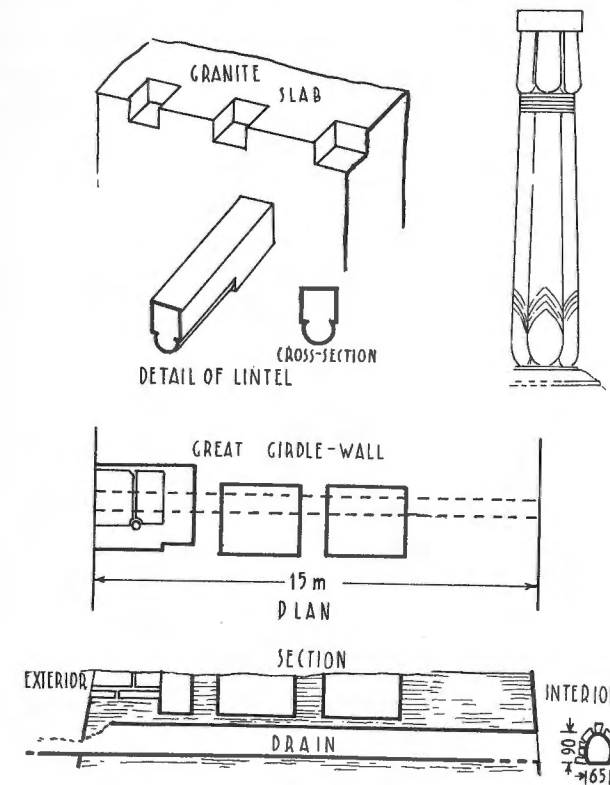
DETAILS OF CONSTRUCTION IN THE GREAT TEMPLE (TANIS).²⁶⁸ The great girdle wall (16-17 m. thick, *ca.* 1,400 m. long) consists of recessed parts with convex courses of brickwork alternating with protruding parts with concave beds. The latter courses were built first and are larger. Faces of walls are battered. The brick used is of a larger type than is usual (40 x 19 x 13-42 x 21 x 14 cm.), and there seems to be some evidence of the use of scaffoldings of timber beams. The brick wall was built on a layer of rammed ostraca (south wing). The gateways were built of various materials, chiefly sandstone and granite, after a human sacrifice had been performed and the remains buried in pottery jars under the threshold.

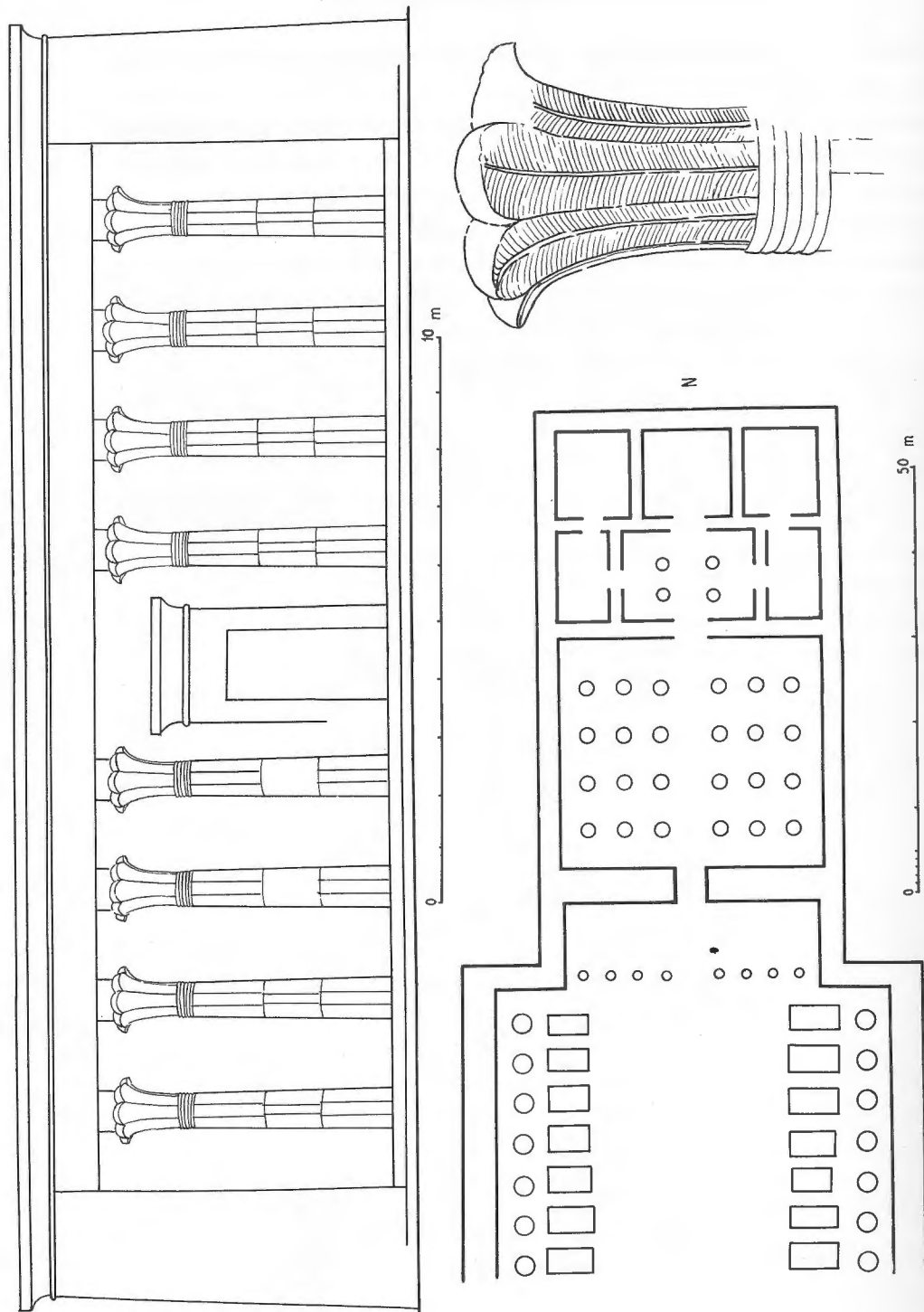
116. Details of gateways in girdle wall of Tanis.



Bonding of brickwork at the quoins is secured by means of wooden beams set in both directions (N.E. corner). A drain (0.9 m. high, 0.65 m. wide) built in the shape of a brick vaulted channel passes through the bottom of the eastern branch. It seems to have been connected to a system of limestone basins and chambers built above it in the thickness of the girdle wall (fig. 116). Large granite elements such as obelisks, pillars, and lintels characterize the construction, mainly in the vicinity of the sanctuary. Large roofing slabs (2.70 m. span) or lining slabs with notches to fit the ends of lintels were used (fig. 117). The cross section of the lintel is semicircular of the same type already known in the Old Kingdom brick vaults and stone ceilings.²⁶⁴ Architraves meeting at right angles in plan were jointed along a broken line, running parallel to one of the sides to continue along the diagonal (45°) between both. Monolithic pillars (6 m. high) and bundle papyriform columns (fig. 117) were occasionally used. A series of large granite slabs from the

117. Constructional details from Tanis.





118. Restored plan and front façade of the temple of Herishef at Ehnasya, and palmiform granite capital of the portico.

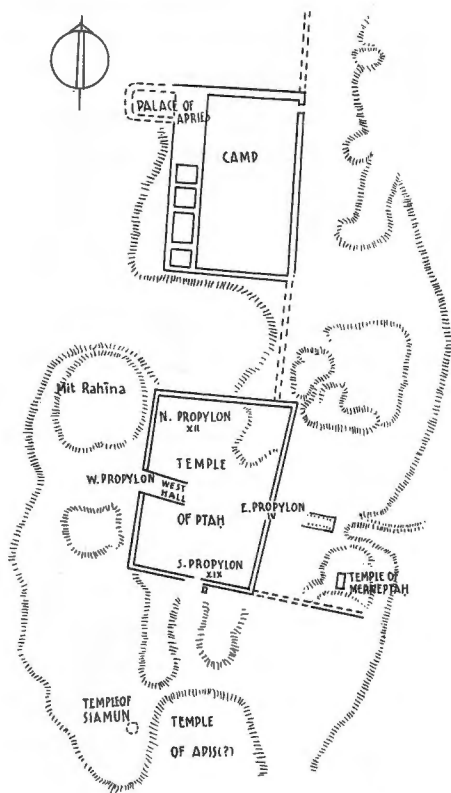
sanctuary (?) were engraved with low reliefs representing scenes of offering. The theme is uniform, but the scale of the personages varies (1.65, 1.40, 1.20 m.), possibly planned to attain an effect of perspective.²⁶⁵ Such optical illusions were certainly embodied in the design of the eastern monumental gateway of the temple complex at Medinet Habu²⁶⁶ and in the façade of Abu Simbel.

THE TEMPLE OF HERISHEF AT EHNASYA.²⁶⁷ It seems that a temple was built in the Eighteenth Dynasty on the remains of a Twelfth Dynasty temple. Ramses II, however, rebuilt the structure on the same plan, adding colossi along both sides of the court (fig. 118). The plan is restored hypothetically as a court, a portico, a hypostyle hall, a transverse hall, and a sanctuary. The court opening south is wider than the rectangular outline of the temple and has a row of columns along both sides. A colossal standing statue of the pharaoh in various dimensions is placed in front of each column. The whole court is paved with limestone. The front of the temple proper has been restored as featuring a portico with eight (?) columns of granite with palmiform capitals, probably taken over from the remains of the Twelfth Dynasty and having a central wider intercolumniation to emphasize the main gateway. The architrave bears a symmetrical inscription and the lowest course of quartzite along the side and back walls had colossal inscriptions. It has been surmised by Petrie that, owing to the depth of the portico, a second row of limestone columns should be restored.

The hypostyle hall was restored in later times. A transverse hall with four columns, flanked by two or more side rooms, follows. At the rear a sanctuary is also flanked with two side rooms.

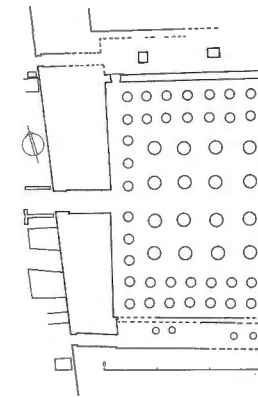
THE TEMENOS WALL OF THE TEMPLE AT HELIOPOLIS.²⁶⁸ We are informed by the inscriptions that the Ramessids built extensively in the temples in Heliopolis. On an obelisk of Seti I from there, now at Piazza del Popolo in Rome, this pharaoh is called "Seti I-luminous-of-monuments" (*akh menuw*). Practically nothing remains from the temples, except for the great temenos wall of the main temple as a rectangular enclosure of double walls in brick (E.-W.), abutting against the fortified city wall on the west. Remains of a gateway have been found on the east side and in the city wall on the west.

The curious fact that the walls are double has been attributed to their having been constructed by two pharaohs, perhaps Ramses II and III. The outer one is later and was intended as a reinforcement to the inner one.



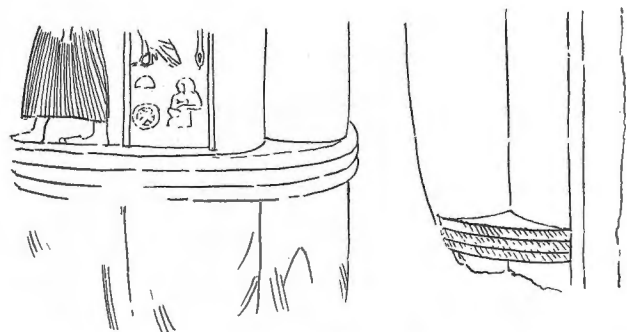
119. Sketch plan of some temples at Memphis.

A GENERAL SURVEY OF THE TEMPLES AT MEMPHIS.²⁶⁹ Only scanty remains of the numerous temples that once covered large areas of the capital of Memphis have been excavated. According to Herodotus supplemented by Diodorus, the city extended about 8 miles (12.88 km.) along the border of the desert necropolis. Its history goes back to the earliest dynasties and it remained an important center of civilization, even when it was no longer a capital, down to the Ptolemaic Period. There were temples dedicated to no fewer than nineteen deities, the most important being that of Ptah, as large as the temple of Amun at Karnak. Other deities who had temples are Hathor (built by Merneptah to the south), Neith (to the north), Amun, Imhotep, Isis (built by Ahmose), Osiris, Khnum, Thot (built by Ramses II), the Aten (built by Akhenaten), Anubis, and Sebek (fig. 119).



120. Plan of the western hall (Ramses II) in the temple of Ptah at Memphis.

Little architectural information has been yielded by the excavations. The temple of Ptah was surrounded by a large temenos wall (N.-S.), nearly rectangular in plan, perhaps the result of the building activity of a host of pharaohs from the First Dynasty to Ramses III or even later. It is built in the traditional style of the great brick wall with curved beds. The bricks are 42 x 21 x 11.5 cm. set in courses perpendicular to the face, which has a batter of 0.11:1.²⁷⁰ Menes is said to have been responsible for the earliest structure (Herodotus II, 99); then a pharaoh of the Fourth Dynasty built the eastern propylaea; Amenemhat III (Twelfth Dynasty) built the northern propylaea; Seti I built a small chapel; and Ramses II laid out a forecourt on the north and a temple in the middle of the precincts and erected the statues in front of the temple. A recently discovered temple of Ramses II abuts on the south face of the enclosure wall of Ptah, oriented east and consisting of an approach through a gateway, a columned portico, a squarish sanctuary with four columns and at its rear three contiguous chapels.²⁷¹ Ramses III built a new temple in the court and added much to the sacred furniture. Actual excavation yielded the plan of the western hall (Ramses III), consisting of a pylon with statues abutting on its external face and a rectangular hypostyle hall (N.-S.) set transversely to the axis (E.-W.). The hypostyle hall preserves the peculiar arrangement of being bordered on three sides by small columns and having in the remaining area four rows of larger ones, perhaps supporting a higher ceiling with clerestory windows (fig. 120). Two passages run from two side entrances along the north and south sides of the hall.



121. Imitation of three rows of cord at the bottom of shafts in the columns of Kha'mwas (temple of Merneptah at Memphis).

The outer walls are of basalt, on a base of granite casing stones. Many of the blocks are reused column-drums of various sizes, engaged in the building of Ramses II. Another curious feature of the structure is the arrangement of the statue bases to suit both the front face of the pylon and the axis of the hall, which is somewhat askew. The bases can have one of their sides square with the face of the pylon while the other is parallel to the axis of the hall. The colossi were of red granite (S. entrance, 22 ft. [6.91 m.] high), alabaster (center of south tower, 38 ft. [11.58 m.]), and limestone (central gateway, 35 ft. high [10.67 m.]).

From the temple built by Merneptah two elements are known: the main south gateway, later blocked up, and the doorway to the temple. From the masonry a ruined column of Prince Kha'mwas, the "archaeologist," son of Ramses II, of the bundle type with bud capital has the unique feature of imitating a three-course rope binding the shaft (fig. 121). This reminds us of the thin band running toward the bottom of all fluted shafts in Neterikhet Djoser's complex at Saqqara (Third Dynasty).²⁷²

'Amarna

The program of the cult temple at 'Amarna was quite different from that of the usual cult temple, being in fact that of a solar temple of a special type. Egypt had had solar temples since the Old Kingdom, and remains of that of Neuserre' at Abu Gurab²⁷³ have allowed a thorough reconstitution of the plan.

The essential elements were a small obelisk on a high base and an altar. In the Aten worship no intermediate element is necessary and nothing of the equipment of the Old Kingdom solar temple is maintained except the altar, indispensable for presenting an offering to the sun disk. As a natural result the program of the 'Amarna temple appeared as an original and unique adaptation to the adoration of the sun disk in the sky.

In its essential parts the temple is hypaethral. There is no need for a naos since there is no deity to be sheltered, and most of the dependencies of the typical cult temple of an anthropomorphic deity in its capacity as the "castle of the god" are not featured. Other elements, however, are essential. Among these characteristics are the general rectangular shape of the plan, enclosed within a temenos wall; symmetry about a longitudinal axis; orientation (façade toward the west at 'Amarna); the pylons as entrance fronts to the courts; the circuitous entrance to conceal the interior from the eyes of the uninitiated; the slaughter court; the altar; and the trees flanking the entrance approach. Most of these features, which had existed in Egypt since the Archaic Period,²⁷⁴ could not easily be dispensed with.

The basic element of an Aten temple is the altar to which a ramp or stairway ascends from the west in the middle of the court, surrounded by a temenos wall. Such an altar platform, occasionally surrounded by a wall and fronted with a porch, is the typical chapel built as a rule in the axis of the main entrance in private estates at 'Amarna (see p. 96). A similar chapel had been erected by Akhenaten in his fortified town of Sesebi in the Sudan (see p. 275). The altar could abut on four ramps oriented toward the cardinal points, as in the so-called "desert altars" east of the North Suburb at 'Amarna.²⁷⁵ This basic altar is to be found in the rear court in each of the three temples at 'Amarna, surrounded by rows of offering-tables. This court is occasionally preceded by another one quite similar (Per-Hai/Gem-Aten) and usually by one court (sanctuary in the Great Temple and in the Royal Temple) or more, filled in with rows of offering-tables (Per-Hai/Gem-Aten).

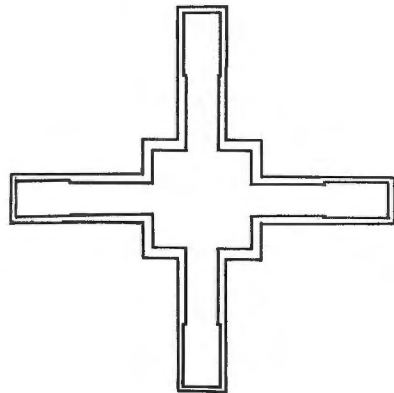
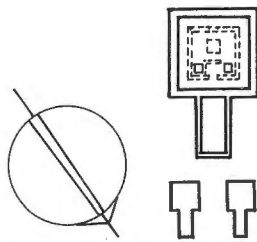
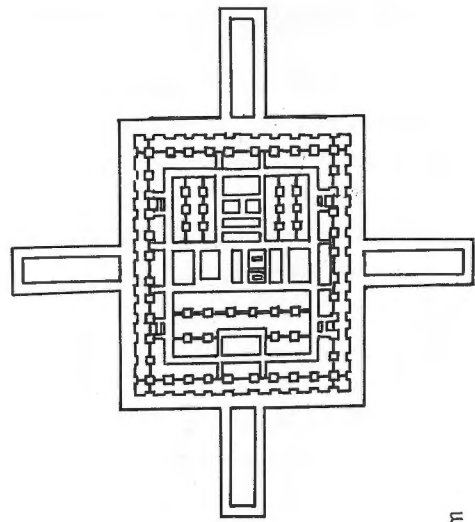
Typical Examples at 'Amarna

THE DESERT ALTARS.²⁷⁶ To the east of the North Suburb at 'Amarna there are three square brick platforms of various sizes, erected along one axis (N.-S.).

The northernmost had four ramps of well-rammed sand and probably an altar in the center. The middle building had originally been a chapel of the type used in private estates with a ramp on the north side and an altar. Later it was replaced by a larger chapel with a ramp, flanked by two mud altars. The southernmost building is the largest and was probably a peripteral pavilion, approached by four ramps, having a central dais and perhaps lined with stone (fig. 122).

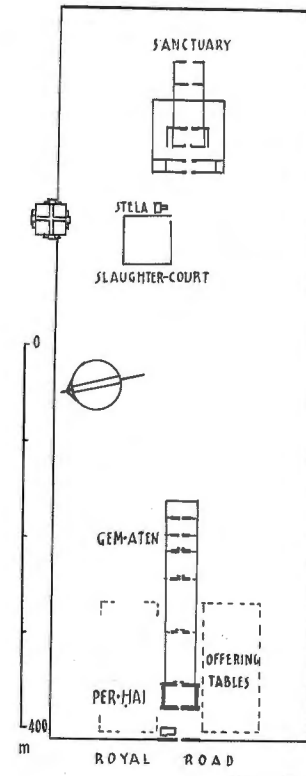
A road runs from the north altar to the north tombs, a disposition that allows us to surmise that these altars were intended for funerary ceremonies.

THE GREAT TEMPLE.²⁷⁷ The Great Temple occupies the largest area in the Central City at 'Amarna (fig. 123). It seems to have been the earliest site to have been built up. Three periods of building can be differentiated from the



122. Plan of the desert altars, east of North Suburb at 'Amarna.

123. General layout of the Great Temple at 'Amarna.



remains. In the last stage there were two large temples inside a large enclosure (760 x 270 m.), directed E.-W., with an entrance façade on the Royal Road in the shape of a pylon. Both temples are set on the central longitudinal axis, about 350 meters apart. The earliest temple, the "sanctuary," was laid out at the rear of the court. In front of it is a small platform, probably for a stela and a colossus of the pharaoh. Just near it is the square enclosure of the slaughter court. The second temple, on an exceedingly long rectangular plan, was built near the entrance, flanked with two areas filled with rows of offering-tables.

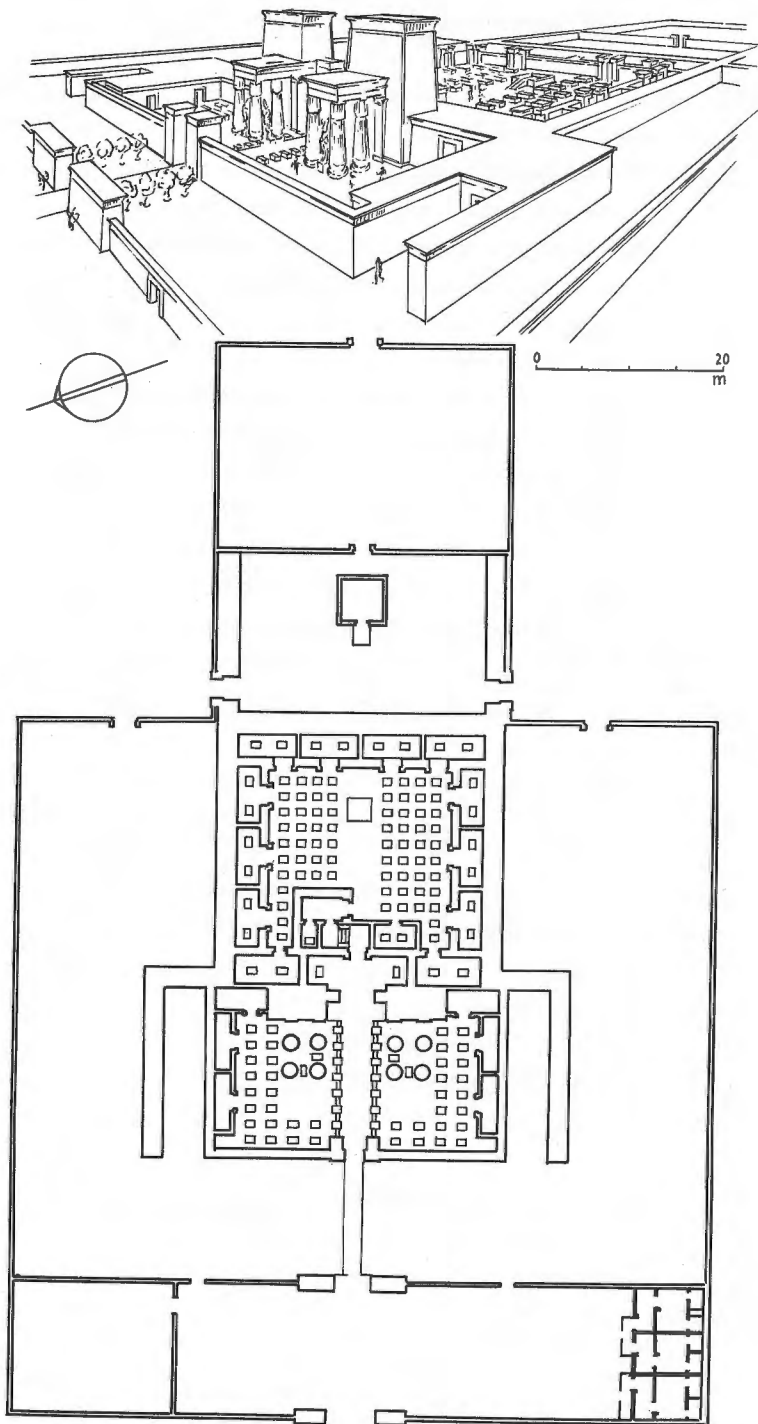
The northern wall of the enclosure encroaches upon the so-called "Hall of Foreign Tribute."

Several features of the construction are of interest. The whole of the foundation-trenches was flooded with lime plaster, on which the line of the walls was marked in black, and the foundation-blocks (50-54 x 25-27 cm.) laid with lime mortar. A similar process was used when laying out bases for the offering-tables or other light structures, the whole area underneath being covered with a plaster floor, then filled in with sand and the actual mud floor laid smooth. There is no doubt that the practice of covering a plaster floor with sand and an upper layer of mud implies some symbolic idea connected with mud, perhaps as the primeval material of the earth.

A comparison of the actual remains with the representations of the temples as found in 'Amarna tombs (see p. 166) has proved most helpful for the restoration and comprehension of the monuments. Most of the ancient drawings agree about the essential features, which have sometimes left no traces after the destruction of the ephemeral capital.

THE SANCTUARY. The plan is enclosed within a court surrounded by a temenos wall with two pylons, one behind the other. At the south end of the shallow court between both front walls are three contiguous priests' houses of the same type as the workmen's houses in the Eastern Village (see p. 113). A white-washed sunken pathway leads along the axis to the façade of the temple proper. The temple consists of four courts of the same width, set one behind the other, with the second and third ones having a high altar in their rear part.

On both sides of the first court are screen walls winding off the plan, parallel to the sides and enclosing a blank area. No attempt has been made by Egyptologists to explain this unique feature; but from my study of the harmonic architectural design of the Egyptians it has become apparent to me that the



124. Restored bird's-eye view and plan of the Sanctuary of the Great Temple at 'Amarna.

two arms jutting out from the body of the plan are 87 cubits apart, that their rear outer wall is 89 cubits from the façade of the outer enclosure, and the length of the inner cul-de-sac 34 cubits. The width of the plan is 55 cubits. The purpose of the two arms becomes obvious: to indicate the layout of the fictive squares whose dimensions give the essential elements of a summation series of Fibonacci—34, 55, 89, 144. This series was often used because of the constant ratio of any two consecutive members as a means of attaining harmonic proportions in architectural design.

In the first court accessible through a gateway rows of offering-tables border the three sides, with shallow lateral rooms beyond. From the evidence supplied by the representations of the sanctuary in the tombs, two porches of four columns each with royal statues between could be restored in front of the two towers of the pylon, leading to the second court (fig. 124).

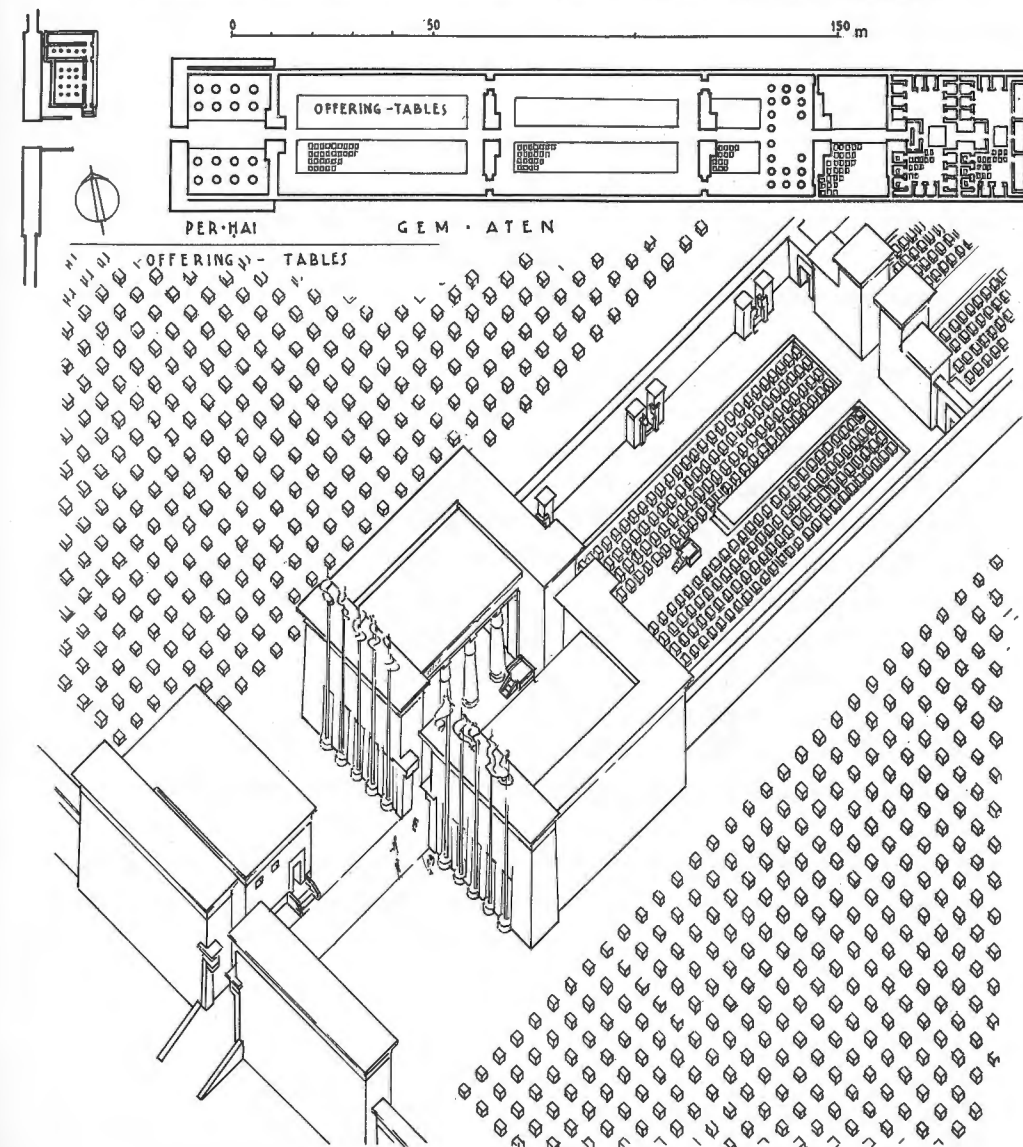
A system of screen walls insuring a winding entrance to the second court can be recognized from the foundation-trenches with the help of the representations. The use of the two porches and screen walls is not necessarily an invention of the 'Amarna architects, for these elements, probably carried out in perishable materials such as wood, must have been usual features of all cult temples. This second court is the most important one and contains a high altar, rows of offering-tables, and a border of contiguous shallow chapels open to the sky (?).

This forms the Sanctuary in its latest stage; but outside the temenos wall are two other courts, one abutting the main court containing the altar of the earliest stage of the project, which once stood at the end of a broad avenue bordered with rows of trees. This area was later built over. From the evidence supplied by the study of the temple Per-Ha'i/Gem-Aten it can be safely inferred that the rows of offering-tables, peculiar to the temples at 'Amarna, have a symbolic implication.

THE PER-HA'I/GEM-ATEN. The second temple behind the entrance to the great enclosure consists of two parts, the Per-Ha'i or "House-of-Rejoicing" and the Gem-Aten or "Finding-Aten" or "Recognizing-Aten." This building was erected on the site of an earlier processional way with a gateway and bordered with sphinxes. The columned pavilion stood to the north of the axis near the entrance to the temenos wall. The layout of the temple proper is unique. Along the longitudinal axis, it consists of the Per-Ha'i—a court faced with a

pylon and bordered by two columned porticoes—and six other courts of the same width but diminishing in length eastward and separated by pylons. The central pathway runs through all the courts along the axis to the last court. The first two courts are identical, having two series of offering-tables on both sides of the pathway. The third court is shallower, contains two rows of offering-tables and, at the rear, a colonnade. The fourth court, which is shallower, contains the usual offering-tables. The fifth and sixth courts are identical, each containing a high altar surrounded by offering-tables and a border of shallow chapels, each enclosing an altar or offering-tables (fig. 125). The unusual number of offering-tables literally covering the floors of the

125. Restored plan and isometric view of part of the Per-Ha'i and Gem-Aten.



courts has received inadequate explanation. Assuming that the two rear altars were not used concurrently, the original plan would feature five courts with an additional duplicated altar court. The total number of offering-tables on one side of the longitudinal axis in the five courts is 365, or $366\frac{1}{2}$ if the rearmost court is substituted for the one fronting it. The calendrical implication of such figures is obvious. The ubiquitous emphasis laid on "every morning" for the rebirth of the Aten in the religious literature at 'Amarna confirms this interpretation.

THE ROYAL TEMPLE.²⁷⁸ This temple named *Hwt-Aten*, "The-Castle-of-Aten," located near the King's House, is enclosed within a temenos wall (100 x 200 m.) fortified with buttresses except on the entrance façade along the Royal Road. This façade was in the shape of a brick pylon, possibly with vertical faces as is shown in the representations of the temple in the tomb of Tutu (fig. 126), with doorjambs lined with stone. Two flagstaffs were fixed into slots in each tower. A secondary doorway in the enclosure flanks either tower of the pylon. In the first court a central ramp bordered with rows of brick offering-tables rose up to a brick altar. A pylon formed the façade of the second court, flanked with secondary gateways. Similar doorways opened in the north and south sides of this court. Granite stelae were inserted within the main gateways.

A priest's house was erected in front of the south tower of the pylon, at the rear of the second court, having a court with an altar and a corridor with three rooms, one of which has a bed alcove.

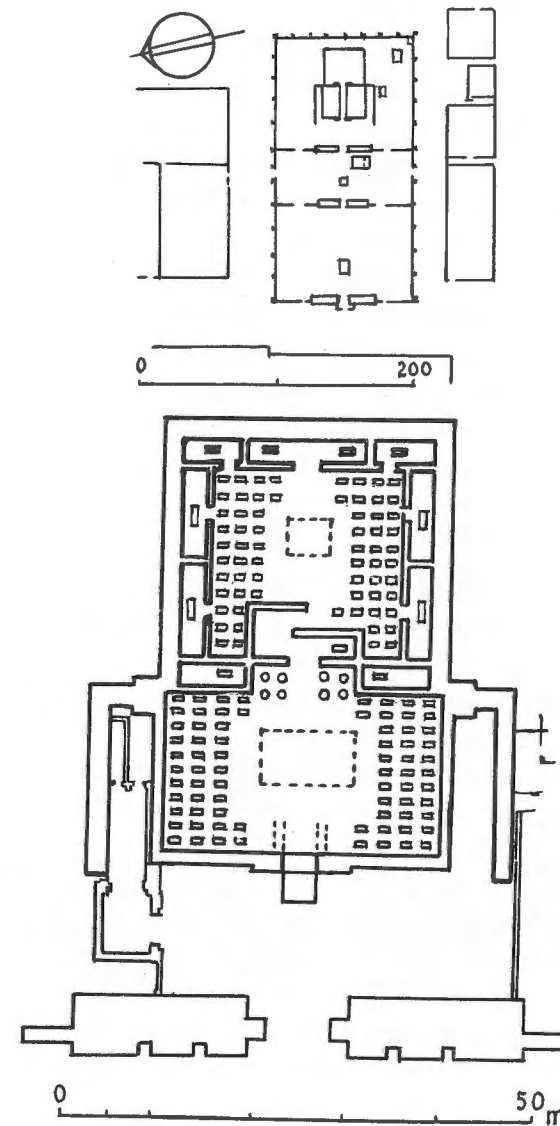
The third pylon and gateway lead directly into the sanctuary itself. The court around it is entered through two subsidiary doorways and contains three domestic buildings in its south part. The sanctuary is rectangular, with wing walls similar to those of the sanctuary of the Great Temple, and it consists of two courts, each with an altar and series of offering-tables. It seems that there was a colonnade flanking either side of the doorway to the inner court. A winding entrance with screen walls leads into the latter, which is bordered with a row of contiguous shallow chapels. Trees were grown to the east, behind the sanctuary, this being corroborated by the representations from the tomb of Tutu.

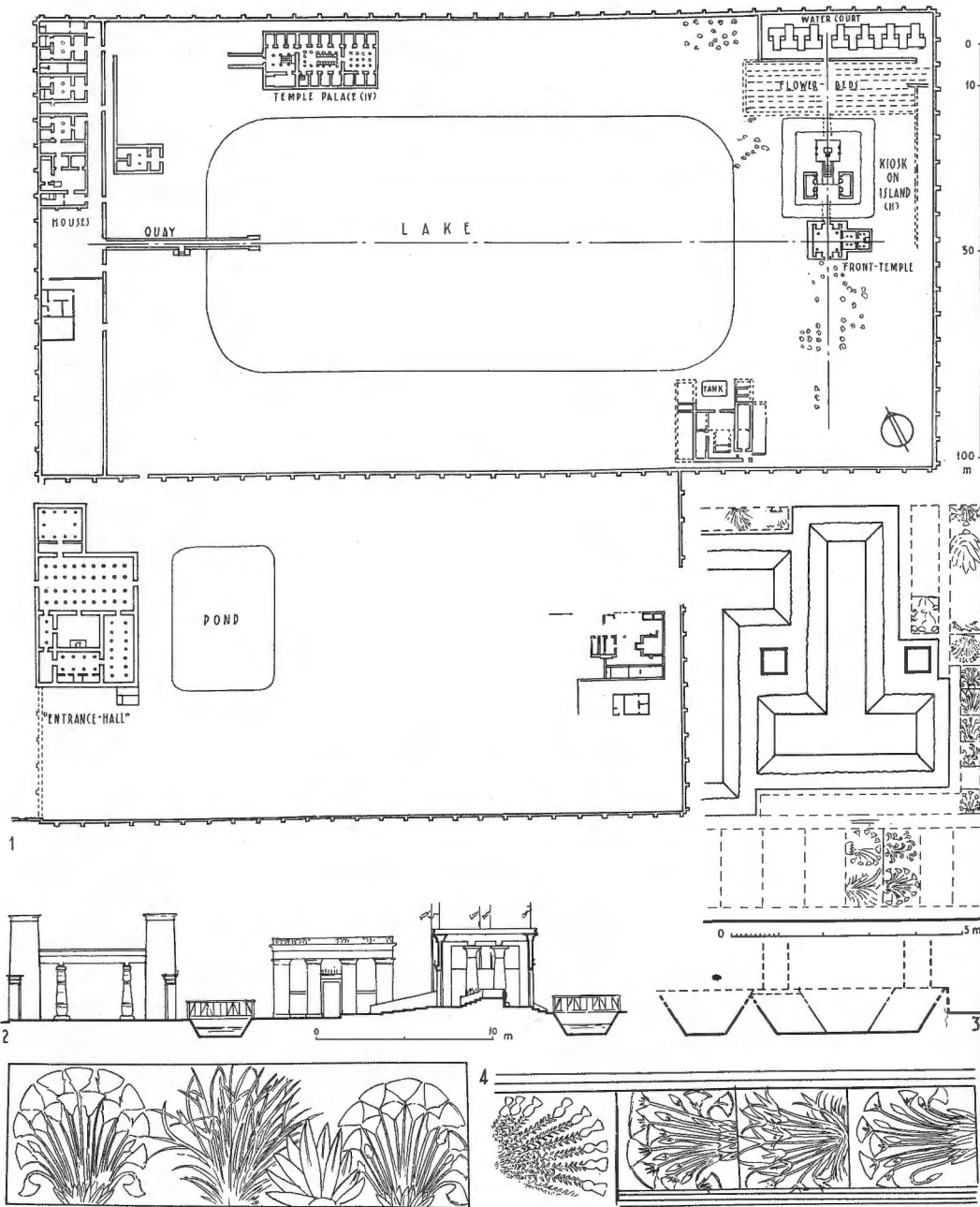
The temple in its main lines is similar to the sanctuary of the Great Temple, though less elaborate. It shows the same harmonic characteristics, though less completely.

THE MARU-ATEN.²⁷⁹ Well to the south of 'Amarna, near the river, are two contiguous enclosures, directed E.-W. The larger one contains a symbolic complex of temples, lake, and palace (fig. 127).

The so-called entrance hall. This is a large court with four rows of nine columns each, with palmiform limestone capitals filled in with colored pastes.

126. General layout and restored plan of the Sanctuary of the Royal Temple at 'Amarna.





127. The Maru-Aten: 1, plan; 2, restored cross section of the kiosk island; 3, detailed plan and section of part of the tanks; 4, painted pavement from the water court.

The central alley opens at both ends, to the west on the street and to the east on the garden and its pool. There seems to be a columned court to the north, and to the south a court with an altar or throne surrounded by three or more columned rooms.

At the eastern end of the garden planted with shrubs are two houses.

Along the western side of the northern enclosure and separated from the remaining grounds by a N.-S. wall is an alley on which open uniformly planned houses set in a row. They are of the same type as the ones in the workmen's village, with a narrow yard extending along their long side. The plan shows the same tripartite division: entrance or front hall, living room with two columns, and two small rooms in the rear part. Animals seem to have been kept in the yard and it is surmised that this series of houses was to be used by the workmen or officials in the precinct.

The largest area is occupied by an artificial rectangular lake (120 x 60 m.) about 1 meter deep, with sloping gravel sides, reminding one of the artificial lake in the palace of Amenhotep III at Malqata. A long quay begins from the wall enclosing the houses and stretches eastward along the axis of the northern enclosure. It projects into the water and has a breast wall on both sides and presumably an awning at its end. The lake was surrounded by a garden planted with trees in holes filled with Nile humus and enclosed within a low mud wall, such as those represented in the contemporaneous Egyptian drawings of gardens. At the southeast corner of the lake are the remains of a structure of unusual plan. It is square with two wings flanking a central body and a tank. In the wings, cellars formed the lower story, perhaps topped with a loggia, while the central body consisted of various rooms of uncertain distribution.

To the northwest of the lake is another building set symmetrically along an E.-W. axis and approached from the west by a long passage between two screen walls. The plan consists of three adjacent courts divided by two transverse walls. Two rows of three columns stand in the first section and probably an awning above the throne and a painting of the Aten on the back wall. The balusters were decorated with colored stripes. To the south of the court stretches a long room, at the rear of which is the alcove characterizing the bedroom and presumably used by the pharaoh when he withdrew for the worship of the Aten. To the north are three contiguous rooms with brick floor and whitewashed walls.

The second section, which is the largest, has two rows of columns along two series of four contiguous lateral rooms. A brick coping (0.2. m. high), built against the column bases, enclosed the central area which was open to the sky. From the west a central alley flanked by two smaller columns led to two mud compartments. The walls were decorated with painted patterns of grapes and pomegranate designs. Two staircases led up to the terrace.

The third section has a central hall with three rooms of four columns each, flanked by two series of three lateral rooms, probably used as cellars, as may be inferred from the quantities of broken wine jars found in them. The walls are cemented and painted in tempera, with vine patterns and pomegranate designs. I think this building corresponds to the temple palace, commonly laid out in front of the funerary temple in the New Kingdom at Thebes.

The buildings laid out to the east of the lake formed with the latter a complex about two axes crossing at right angles (W.-E. for the lake and N.-S. for the buildings, flower beds, and water court). The W.-E. axis of the lake and its eastern quay coincides with that of the front building. On the comparative evidence provided by the description of a maru dedicated by Amenhotep III to Amun in Western Thebes²⁸⁰ and that of Ptolemaic times²⁸¹ dedicated to Horus at Edfu Behedet, Edfu Djeba, and Dendera, it seems almost certain that the eastern complex of buildings formed the essential part of the Maru-Aten. A maru was a religious building, which according to its name, would have served as "viewing place" for solar gods such as Amun, Aten, and Horus.

This complex, as it now exists, consists of the front temple, the kiosk on the island, the flower beds, and the water court.

The front temple forms the connecting link between the eastern complex and the lake, since both N.-S. and W.-E. axes cross in the center of its court. The temple is of the normal 'Amarna type: an outer court with four columns of alabaster (lower drums) and sandstone (upper part), a pronaos with four columns and a hypaethral sanctuary, with a central altar exposed to the sun and two columns along each side wall. It has been suggested by Gunn²⁸² that a window of appearance opened in the east rear wall of this sanctuary just above the altar so that the Aten could be seen and adored as it rose in the morning. Richness of treatment must have characterized this building, the shaft of the columns being carved with wreaths of grapes and ducks, and the capitals with lotus, the lintels being in alabaster, and the walls decorated with inlaid reliefs and inscriptions. Its connection with the lake is clearly indicated by the W.-E.

axis common to both: the quay would have formed the parallel element to view the Aten in the morning across the lake, and the Aten could have been viewed at sunset from the temple as it went down into the lake. It seems that this lake was symbolical for the Nile, which is said in the solar hymns to have been created by the sun.

The kiosk forming the central element of the eastern complex is a peripteral chapel raised on a platform to which a stairway leads. Four columns with reeded shaft which are connected by high screen walls form the sides of the pavilion. A dais for an altar or throne rose in the middle. The outside is decorated with naturalistic designs of plants and animals. According to Fairman²⁸³ the kiosk would have served as the often-mentioned "sunshade," known from the inscriptions.

The kiosk is surrounded by an artificial moat which forms a small square island. The approach to the kiosk itself is flanked by two houses, similar in plan and decoration: a pavilion with open front façade on two pillars, flanking the doorway and two antae. Here also the richness is the main feature: doorjambs are reeded, screens are perhaps in the shape of inlaid quartzite or alabaster stelae, floors are of alabaster, and internal walls are lined with faïence. I would rather consider this kiosk as the temple where the initial monthly festival of the Aten, called "Birth-of-Aten" (*mswt-Itn*), was celebrated. It is to be brought into connection with the eleven tanks of the water court, which presumably symbolized the remaining eleven monthly festivals.²⁸⁴

The flower beds flanking the pathway between the kiosk and the water court would symbolize the beneficial action of the sun upon plants. A solar hymn of 'Amarna reads: "Thy rays nourish every garden."

The water court was a long rectangular area (E.-W.) with a central row of square piers (13), in the midst of a series of contiguous T-shaped shallow tanks. The construction of these tanks is ingenious: the T-shaped elements alternate in plan, being separated by ridges triangular in section and plastered with mud. These sloping sides were painted white below the water level, but decorated above it with designs of water plants. The floor of the passage surrounding the tanks was also decorated with such motifs as fowl and heifers. This rich color treatment, although lacking in originality, was probably symbolical for the flora and fauna characterizing every month and calls to mind the treatment of the pavement in the Northern Palace. It shows a good sense of composition and technical ability, being a mixture of details and impressionis-

tic treatment. As a preparatory stage in the construction the whole area of the tanks was excavated and cross walls were built in brickwork and a floor of brick laid down. Two of the pillars were reinforced with timber beams laid crosswise in superimposed layers. It can be noticed that the tanks were laid out asymmetrically about the alley and the axis of the kiosk. This intriguing point can happily be accounted for if we accept the surmise that each tank symbolized a month with its particular flora and would have served for the celebration of the monthly "Birth-of-Aten." In Ptolemaic times the initial festival of the Falcon of the sun god Hor-Re' was celebrated in his maru at Edfu on the first of the month of Tybi (fifth month of the year). At Maru-Aten four monthly festivals would have been celebrated in turn about the four tanks west of the alley; the initial festival, however, would have been celebrated in the kiosk, and the seven remaining ones about the seven eastern tanks.

With the exception of the cenotaph of Seti I at Abydos, the Maru-Aten is probably the most elaborate symbolic layout in the religious architecture of the New Kingdom. It would have conveyed by means of architectural elements and layout the various aspects of Aten in his potentiality as Creator.

THE TEMPLE OF SETI I AT ABYDOS.²⁸⁵ This large temple is unique in being laid out on an irregular plan and having seven shrines for seven deities, one being the deified pharaoh (fig. 128). The main body of the building is symmetrical

128. Perspective of second hypostyle hall, of one of the chapels, and plan of the temple of Seti I at Abydos.

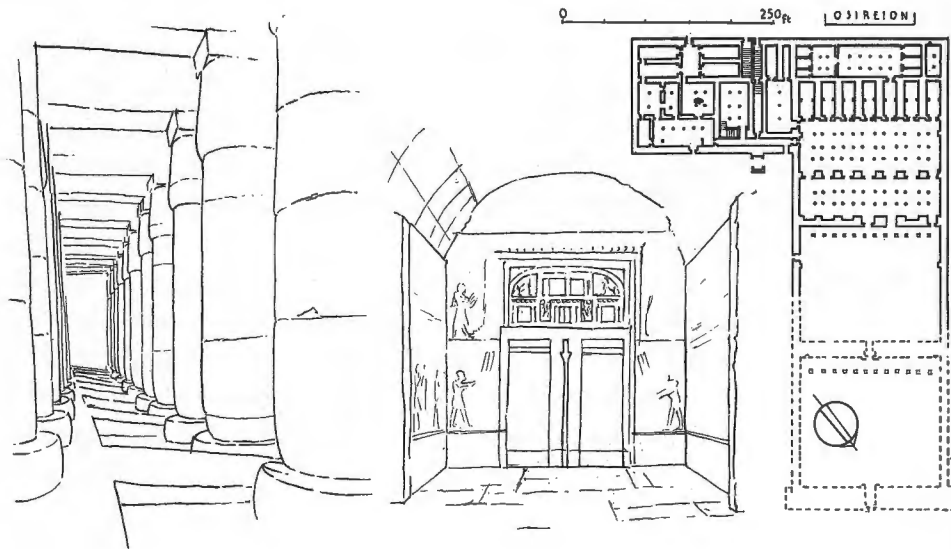


Plate 8. Second hypostyle hall in the temple of Seti I at Abydos.

(N.E.-S.W.) up to the rear of the shrines, but it has a southern wing appended to one side. Several explanations of this unusual feature have been propounded, including the following: the presence of the Osireion mound and building just 26 feet (7.92 m.) behind the site; its sacred spring²⁸⁶ (Strabo mentions a spring connected with the temple of Seti I, "The Memnonium"); and last, but most unlikely, the difficulty of excavating the rock.²⁸⁷ The structure is of fine limestone for the walls and of harder limestone for the architectural elements.

A landing quay, a ramp, a front terrace, and two courts with two pylons and pillared porticoes (12 pillars) at the rear precede the buildings. On the walls were scenes celebrating military exploits of Seti I and his son Ramses II in the presence of the gods. To the southeast of the main body of the temple, between the first and second courts, has recently been found what presumably is the temple palace of Seti I. The first hypostyle hall of appearance, relatively shallow, has two rows of bud papyriform columns (24), set in pairs flanking five processional pathways and ramps leading to five doorways in the axes of five of the shrines. There are two more pathways on the two sides having a similar arrangement, but with only one pair of columns on one side. The wall scenes represent the themes relevant to the function of appearance hall: youth of Seti, his coronation, and offering-bearers personifying the nomes. The same plan is used for the second hypostyle hall (pl. 8), which has three rows of columns, two being identical to the former ones but the third being raised on a high platform and consisting of a cylindrical shaft without capital. The decoration consists of incised reliefs from the reign of Ramses II in the first hall and beautiful low-relief scenes representing Seti I and gods in the second one (pl. 9).

In the seven axes are seven sanctuaries for the sacred cult statues and their barks in the shape of deep contiguous rooms roofed over with corbeling slabs cut as flat vaults. They are decorated with stars and the royal cartouches, while the low-relief scenes on the walls represent the pharaoh with the seven gods and their relatives (pl. 10). In the rear wall of each is a double false-door, except in the sanctuary of Osiris, closely similar to that of the throne room in the temple palaces at Thebes (palace of Ramses III at Medinet Habu). Seti I calls his temple "An August Palace of Eternity." Behind the sanctuaries and accessible from the sanctuary of Osiris is a central transverse hall with ten columns without capitals, flanked on either side by three contiguous rooms.



Plate 9. Seti I pouring a libation before Osiris and Horus; low relief on the west wall of the hypostyle hall.

Plate 10. Seti I enthroned between Buto (left) and Nekhebet, with Horus and Thot; low relief on the west wall of the sanctuary of Pharaoh in his temple at Abydos.



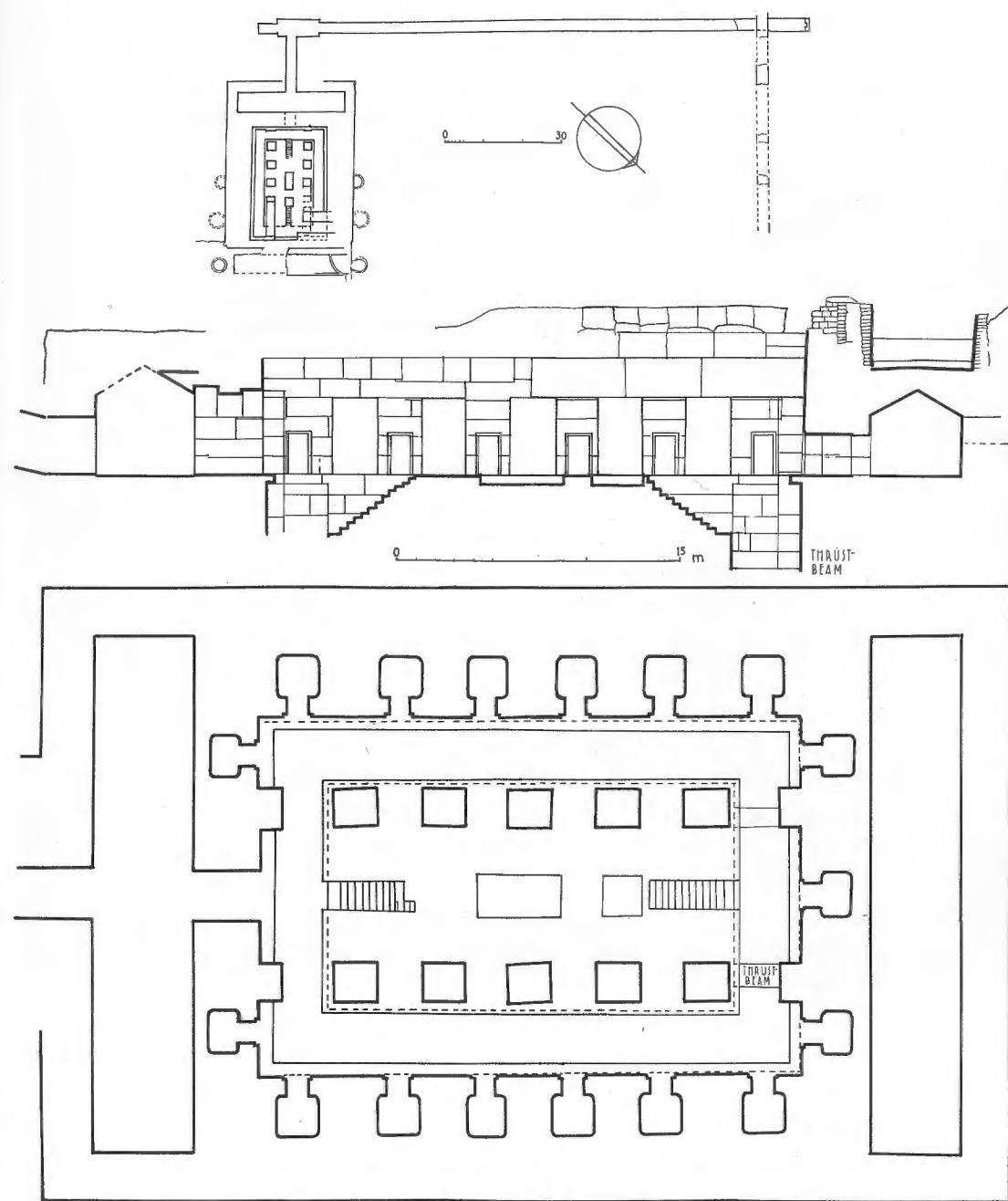
Each of the five sanctuaries of Ptah, Re'Horakhty, Amun-Re', Horus, and Isis contained the cult statue of its god and the wall scenes of each represented the daily cult ritual. Although these sanctuaries were located to the rear as were the bark-chapels in other temples they did not contain the barks. These were stored together in a special room opening north of the kings' gallery. The broad bench running around the walls of this room was to store the barks (*ca.* 2.68 m. long) depicted on the walls. The barks were carried to their cult-statue sanctuaries on festivals; hence they were also represented there. The sanctuary of Seti I (southeast) was dedicated to the cult of the royal statue.

The unfinished south wing, accessible from the second hypostyle hall, consists of a small hall with columns without capitals, and the kings' gallery on whose walls are the names of the most important 76 pharaohs down to Seti I, leading to a slaughter court bordered on three sides by a portico on seven columns. The drainage system in its floor is a proof that the animals were really sacrificed there, as shown in its wall scenes.

The architectural value of this temple is outstanding, showing a marked effort toward simplicity, in both the design and the layout, with its seven parallel series of groups of columns with wider intercolumniations for the pathways and ramps, and the columns with the simple cylindrical shaft without capital. This latter rare type was met with in the temple of Sahure' (Fifth Dynasty), but here it has sturdier proportions (5.5 diameters to the height instead of 6.5) and a slight taper, with a square abacus whose side equals the diameter of the top of the shaft and four vertical bands of inscriptions.²⁸⁸ The mural decoration in fine low-relief scenes of elegant design and coloring (color plate VIII), among the best of all periods, enhances the aesthetic value of this monument.

The harmonic analysis of the plan shows that the L-shaped design was not an afterthought, but the result of a well-studied alternative to the usual axial plan.

THE OSIREION OR CENOTAPH OF SETI I (ABYDOS).²⁸⁹ The cenotaph lies within the sacred precincts, to the west and on the same longitudinal axis as that of the main body of the temple of Seti I. It was built in an excavation in the sandy-clay stratum of the desert, with almost vertical sides. Two parallel limestone walls running over the eastern room of the cenotaph served as retaining walls to the sand bed upon which the temple was built. It seems that both cenotaph and temple of Seti I were built at the same time (fig. 129).



129. General layout, plan, and section of the cenotaph of Seti I at Abydos.

Layers of stone chips corresponding to the levels of the horizontal joints between the masonry beds may be interpreted as the result of throwing in the marl excavated during construction to serve as a constructional ramp. Six tree-pits were found on the north, east, and south sides of the central hall. They are circular in shape, 4 meters in diameter, with walls of limestone flakes (0.5 m. thick), containing black earth intended to reach ground level around the temple.

The cenotaph is a subterranean building on a rectangular plan, reached from the west through a long vaulted ramp N.-S. (32 m.), entered from the bottom of a shaft outside the temenos wall of the sacred precincts. The vault is flat, of the laminated type five courses thick, alternating in their inclination (10° from the vertical), built of special curved bricks. The limestone walls of the passage are inscribed with scenes from funerary books and support a sandstone pent roof (71° to the horizontal). A broadening of the passage where it turns at right angles to the sloping passage reminds one of the same broadening in the Theban royal tombs. The sloping passage (15°) starts and ends with a horizontal stretch and had texts from the Book of the Dead on its walls. It opens into a transverse room (27.15 x 5.25 m.; 4.65 m. high), roofed over with a corbel roof cut in the shape of a pent roof underneath. It is symmetrical with the sarcophagus chamber (pl. 11), set on the other side of the central hall.

This central hall forms the main part of the building, in the shape of a rectangular island surrounded by a channel bordered with unfinished cells. A ledge surrounds the island and the cells opposite (pl. 12). Two stairways descend from the eastern and western small sides to the bottom of the channel. Ten sturdy pillars of red granite (seven monoliths 2.09–2.12 x 2.35–2.38 m.) form two rows along the long side of the island. At the ends of the rows are corresponding antae pilasters in the walls opposite. They carry architraves supporting roofing slabs (10 x 2.5 x 1.6 m. thick) and coping stones.

Thrust beams were set at the bottom of the channels between the island and the opposite walls, under the line of piers and pilasters about one-third the height above the foundations. The latter were just above the subsoil water-table in Seti's time.

The west room (27.15 x 4.75 x 4.45 m. high), set transversely and similar to the entrance hall, built of limestone with a corbeled roof of sandstone cut in the shape of a pent roof, had inscriptions on its plaster. It seems that there



Plate 11. The chamber in the shape of a sarcophagus in the cenotaph of Seti I at Abydos; the only light reflected by a mirror comes through the gap in the wall.

was no entrance to this sarcophagus chamber. The roof has delicate reliefs showing Nut, the goddess of the sky.

The similarity of the plan of the cenotaph to that of the Theban royal tombs is obvious, the sarcophagus chamber being itself, on account of its shape and position, a huge sarcophagus. Such cenotaphs intended as a substitute for the actual burial located in some other place were built at Abydos by Senusert III, Ahmose, and Queen Tetisheri. In the cenotaph of Seti an Osireion, or the likeness of an Osirian burial on the Primeval Hill, surrounded by the primeval waters was set out as described and pictured in various texts and papyri. The central hall, with its channel surrounding the island and accessible from two opposite stairways, obviously pictures the Primeval Hill and its surrounding waters. Thus it amalgamates Osirian (sarcophagus chamber and trees) and cosmogonic beliefs.

The building was never finished and it has been described briefly by Strabo (XVII.I). It was decorated with low relief. It is in sandstone with limestone for the rooms and corridors, and granite for the piers and architraves.

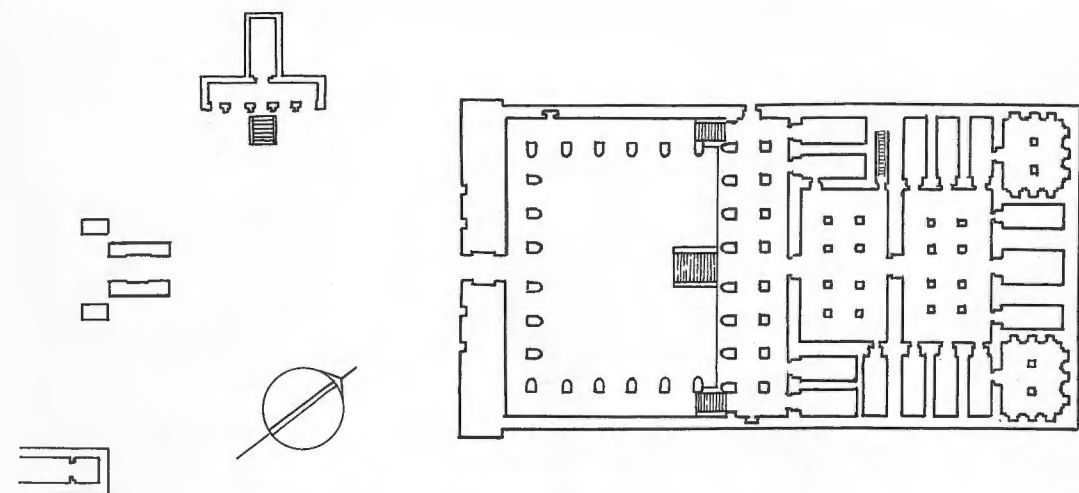
The architectural simplicity, which reminds one of the Fourth Dynasty style as exemplified in the valley temple of Chephren at Giza, features even sturdier proportions for the piers and intercolumniations (360:168 in. [9.14:4.27 m.] for height:width, compared to 444:210-254 in. [11.08:5.33-6.45 m.] at Giza). This simplicity is certainly not due to the unfinished state of the structure, but rather to an attempt at expressing its purpose as an underground duplicate of the Primeval Hill and waters and a parallel to the royal tomb.

This monument is perhaps the most conspicuous example of religious symbolism in Egyptian architecture. A basic phase of the Osirian myth, that of the burial of Osiris in a cosmological setting, is interpreted in everlasting architecture. As a result of the democratization of the Osirian rites, originally a prerogative of royalty, individuals seem to have yearned for an Osireion of their own. In at least two Memphite tombs there is a representation of the funeral ceremonies being performed on an artificial island surrounded by a watercourse bordered by a range of edicules on the outer bank. Whether this was a copy of the Osireion at Abydos or of a Memphite one cannot be assured (see p. 496).

THE TEMPLE OF RAMSES II (ABYDOS).²⁹⁰ Located north of the temple of Seti I and also dedicated to Osiris and the deceased pharaoh this temple had a large



Plate 12. The hypostyle hall in the cenotaph of Seti I at Abydos.



130. Plan of the temple of Ramses II at Abydos.

forecourt fronting a peristyle court bordered with Osiride pillars. The plan of the temple proper is symmetrical consisting of two broad pillared halls transverse to the longitudinal axis E.-W., flanked by small chapels, and at the rear the three typical contiguous sanctuaries, and in either corner a hall with two pillars (fig. 130). The broad halls and the three rear chapels are the same width so that they form an axial strip flanked on either side by a narrower one consisting of the chapels. The plan is in fact based on a grid pattern.

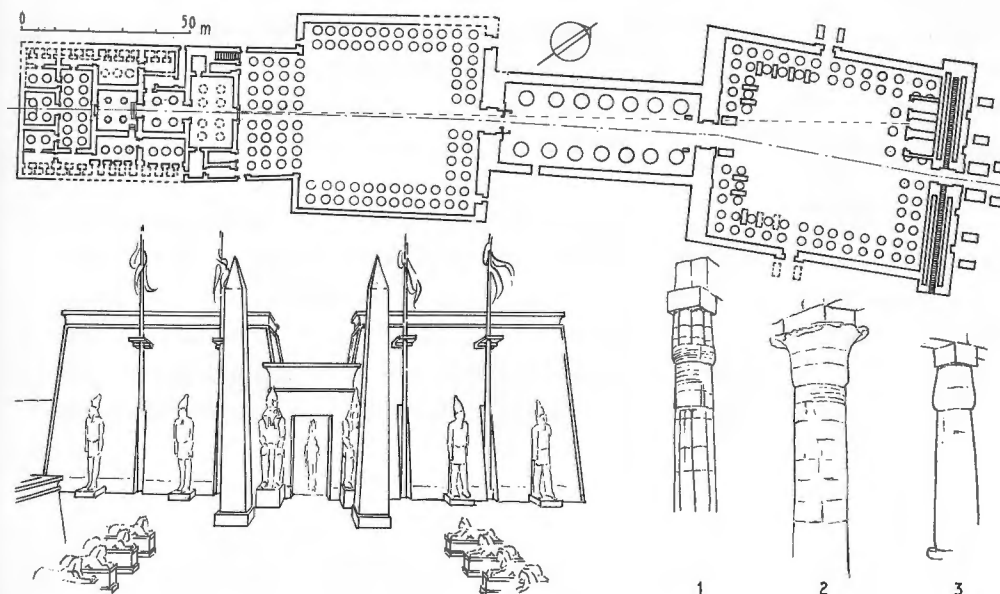
In spite of its ruined condition the temple is of considerable interest not only because it must have been the most beautiful and richest among the temples of Ramses II but also on account of its significance for the study of the correlation of function of building with wall scenes. The walls of limestone had pink and black granite door frames, sandstone pillars, and a sanctuary of alabaster. The scenes in low relief compare as to quality with those in the temple of Seti I. Sunken relief was used in the court, in the first hall, and in its adjacent chapels. The first pillared hall is the Hall of Appearance decorated with a dado of offering-bearers personifying nomes, topped with scenes of the pharaoh making his offering to Osiris, heading a procession, carrying the Abydos cult symbol into the temple, and being crowned. The two chapels on either side of the first hall open directly on the court and are dedicated to forms of the royal cult: the cult statue of Seti I and its bark (southernmost chapel), the chapel of the ancestors of Ramses II (south of the pillared hall),

the chapel of the bark of Ramses II (north of the hall), and the chapel for the funerary cult of Ramses II and for Hathor. The central pillared hall must have served as offering-table hall fronting the three contiguous sanctuaries: the middle one contained the cult symbol of Abydos on its sled and featured a double false-door in its rear wall, the northern one reserved for Isis' bark, and the southern one for Horus' bark. The chapels opening north of the offering hall were dedicated to various gods while the rooms symmetrical to them opening south were magazines for linen, costumes, and equipment. The two squarish halls, each with two pillars and nine niches, were perhaps for the cult of the ennead of the temple.

On the external walls are scenes of war against the Hittites (north and west) and an inscription recording the building and endowments of the temple.

THE TEMPLE OF AMUN AT LUXOR "SOUTHERN HAREM" OR "SOUTHERN PRIVATE AREA" (*Ipet resyt*).²⁹¹ The greater part of the temple was built by Amenhotep III on the site of an earlier structure and dedicated to the triad of Thebes: Amun, Mut, and their son Khonsu. The temple (623 x 181 ft. [189.89 x 55.17 m.]) consists of a colonnade, a court with porticoes, an "open" hypostyle hall of an unusual type, four small halls with lateral rooms, the sanctuary, and two shrines (fig. 131). Around it ran a girdle wall consisting of independent

131. Plan of the temple at Luxor, restored front, and details of columns from the (1) hypostyle hall, (2) processional colonnade, and (3) forecourt of Ramses II.



massifs of sun-dried brick abutting at their ends, built of courses set on a triple system that ran concave-horizontal-concave.

In front of the temple was the earlier small sanctuary in granite of Thutmose III (pl. 13). Beside the temple Amenhotep IV built a sanctuary to the sun which was later destroyed by Horemheb. Tut'ankhamun, Horemheb, and Seti I worked at the low reliefs on the walls of the colonnade. In front of the temple Ramses II added a large court with porticoes, along an axis askew to the curved original one so that the entrance to the new pylon could be placed beside the earlier sanctuary of Thutmose III without encroaching upon it. The sanctuary was reconstructed by Ramses II at the same spot and was embodied in the courtyard portico, abutting on the inner face of the northern tower of the pylon.²⁹² It was necessary for the columns nearest the sanctuary of Thutmose to be engaged in its walls resulting in a quite unusual type of column. Such deviations are evident in other temples: the Ramesseum set askew owing to the older temple of Seti I, the girdle wall of the mortuary temple of Ramses III laid out irregularly because of the older temple of Ay and Horemheb.

The longitudinal axis of the temple is curved, formed of straight stretches set end to end (pl. 14). The rearmost part of the plan up to the open hypostyle hall has the same axis as the earlier temple of Thutmose III, probably parallel to the riverbank. From the rear of the open hypostyle hall the axis deviates eastward to allow it to pass east of the earlier temple of Thutmose III and be linked to the axis of the processional alley of sphinxes running toward the temple of Khonsu at Karnak. The process of curving the axis is allied to a deformation of the various parts of the plan beyond the hypostyle hall into trapezoids (court and colonnade) or parallelograms to allow for symmetry along this axis. At the same time the lines transverse to the axis are not parallel to one another but they follow the curvature in a compromise to set them at right angles to this axis. Curved axes are also used at Karnak and later in Philae.

The part added by Ramses II consists of a forecourt (*wsekhet khefet-her*) surrounded on the inside by a double portico along its four sides and fronted by a huge pylon faced with six royal statues, the one to the east being "Ruler-of-the-Two-Lands," and with two granite obelisks. These two obelisks are not on the same alignment, probably to make up in perspective for their difference in height. The court, a "feast court" called "The-Temple-of-Ramses-



Plate 13. Façade of the small temple of Thutmose III in the court of Ramses II at Luxor. Beyond is the west tower of the pylon and one of the obelisks that flanked the entrance.



Plate 14. View of the great colonnade of Amenhotep III at Luxor, showing the bent axis of the plan.

Plate 15. The southeast corner of the court of Ramses II at Luxor.



Meriamon-united-with-eternity,"²⁹³ is a parallelogram (187 x 167 ft. [57 x 50.9 m.]) and is bordered on its four sides by a portico with two rows of bud papyriform columns with cylindrical shafts. Colossal granite statues of Ramses II representing him striding with a diminutive Queen Nefertari were placed between the columns of the south part (pl. 15). The colossus to the west was "Re'-of-the-Rulers," a name borne by other statues at Abu Simbel and the Ramesseum. The decoration of the walls is in sunk relief showing scenes of victories over the Hittites in Syria (outside), the battle of Qadesh (pylon), and sacrificial scenes and processions above a long row of princes, princesses, priests bearing offerings, fatted oxen gaily decorated, and priestesses about to enter the pylon of the temple. The eastern doorway was the "Great-doorway-'King-of-Upper-and-Lower-Egypt-Userma'tre'-Setepenre'-worshipped-by-the-people.'"

The temple proper, as built by Amenhotep III, was approached via a colonnade of fourteen huge open papyriform columns (52 ft. [15.85 m.]), enclosed within two parallel walls later decorated by Tut'ankhamun, and usurped by Horemheb, with realistic scenes on its west wall of the voyage of Amun from Karnak to Luxor and back on the yearly festival of Opet (pls. 16, 17). Inscriptions mention six way stations of the bark carrying the statue of Amun between Karnak and Luxor, each possibly having a repository chapel (*men wahet*, "way station").²⁹⁴ The processional dromos bordered with columns, but without the side walls, is a current feature in the Theban cult temples (Soleb). The side walls were probably built by one of the successors of Amenhotep III. The granite chapel of Thutmose III consists of three contiguous deep shrines for the barks of Amun, Mut, and Khonsu, preceded by a porch with four columns. It was rebuilt by Ramses II whose statuettes stood in niches in Amun's shrine. The orientation of this small temple parallel to the river, but southward, implies the existence of a watercourse stretching perpendicularly to the river which was probably filled in later.

The large court (148 x 184 ft. [45.11 x 56.08 m.]) is a "feast court" bordered on three sides by a portico with two rows of bud papyriform columns. It is to be noticed that the width of the court at its rear is slightly less than at its front to comply with symmetry about the curved longitudinal axis. This would have perforce enhanced the depth of the perspective of the court by an optical illusion and added to its impact (cf. similar optical illusions in the entrance gateways at Medinet Habu).

The hypostyle hall, described as a hall of appearance (*wsekhet kha'it*), has 32 bundle papyriform columns and is of a unique shape on account of its front façade open to the court (pl. 18). This type of plan corresponds to the much earlier two-step plan of vestibule connected by a pillared court found in the Old Kingdom funerary temple (Cheops).²⁹⁵ The decoration of the walls shows Amenhotep III before the gods of Thebes ceding the temple ("presenting the house to its lord") above a plinth of personages personifying the Egyptian nomes. The effect of light and the balance of the plant columns in this hall can be regarded as a most successful achievement of architectural beauty²⁹⁶ (pl. 19).

In the rear wall of the hall one doorway opens onto a broad hall, originally with eight columns, flanked by two small shrines (Mut, Khonsu), a staircase, and a passage to the rear. This hall was used later for the cult of the Roman emperors and contained the standards of the legion, once its south doorway was blocked with an apse painted with figures of the two Augusti and the two Caesars (end of A.D. third century).

Two square halls, each having four columns, follow one behind the other. They are flanked by side rooms, in three of which are three columns, and an outer series of four contiguous cells. The second central hall is the bark-chapel, now containing a shrine built later dedicated by Alexander the Great to Amun. Its scenes represent the king entering, receiving the two crowns, and offering rites. The north lateral room on the east is dedicated to the theogamy or marriage of Amun with Queen Mutemuya, the mother of Amenhotep III, represented in low-relief scenes similar in subject to those of Hatshepsut's temple at Deir el Bahari. This record of a divine marriage, imagined by some ruler to legalize his rights to the throne, was interpreted graphically in the Eighteenth Dynasty, but it had been known since the Old Kingdom (cf. the divine origin of the pharaohs of the Fifth Dynasty as related in the Tale of Cheops and the Magician). At the time of Amenhotep III the remaining part of the temple was accessible through a side doorway in the east wall of the rear hall. Later a central doorway was opened behind the stand for the bark, in the axis of the plan. This arrangement of two separate sanctuaries, the one in front made accessible to the people and the one to the rear reserved only for the priests, is one of the characteristics of this temple. Above the lintel of the doorway between both rooms, concealed by removable slabs and accessible by holds cut in the wall, was a small chamber probably for oracular



Plate 16. The colonnade of Amenhotep III as seen from the first hypostyle hall at Luxor.

pronouncements like that in the temple of Khonsu. It is possibly the earliest example of a bark-chapel set in front of the shrine of the statue of the god, an arrangement that was followed in later temples.²⁹⁷ A broad "hall of the offering-table" (*wsekhet hetep*) with twelve columns precedes the shrine of the statue and is flanked by two small rooms, the eastern one being in fact a small "hall of the offering-table." The statue of Amun seated was of colossal proportions, placed on a socle abutting on the rearmost columns, like the socles of thrones in temple palaces. There were two lateral balustrades. This is represented in low relief in two scenes flanking the entrance doorway to the rear shrine. This separation between two sanctuaries was not a new feature; the mortuary temples of the Old Kingdom have it. Amun-Re' of Opet put in an appearance every ten days under Ramses II to proceed to a way station near the Nile; and every year he crossed the river to visit the Lords of the West or earlier kings in Western Thebes and rest in the shrine of Amun at Medinet Habu.

Flanking the gates were colossal statues of the pharaohs standing or seated, such as those of Ramses II in the forecourt, and groups of Amun-Re' and his wife on the south side of the doorway of the pylon just before the northernmost columns in the colonnade of Amenhotep III (pls. 20, 21).

THE TEMPLES AT KARNAK (EGYPTIAN *Ipet Iswt*, "THE-ONE-CHECKING-THE-CENSUS-OF-PLACES"). El Karnak is an antiquated term in the local Arabic of Upper Egypt and the Sudan meaning "fortified village," curiously reminiscent of the Egyptian "castle of god" (temple).

A HISTORICAL SKETCH. The power of the god Amun of Thebes had gradually increased in the early New Kingdom, and after the short persecution led by King Amenhotep IV-Akhenaten, it rose to its apex. In the reign of Ramses III more than two-thirds of the property owned by the temples belonged to Amun. The stupendous buildings at Karnak are one aspect of this wealth recorded in contemporaneous temple archives.

There are remains of a temple from the Middle Kingdom to the rear of the complex. The mention of a pharaoh's name preceding that of Snefru in the list inscribed in the ancestors' hall of Thutmose III at Karnak proves that this site was hallowed ground since the Third Dynasty. Amenhotep I (1557-1530 B.C.) built a small alabaster sanctuary. Thutmose I enclosed the earlier Twelfth Dynasty remains within a girdle wall and built a new structure con-



Plate 17. View from the south corner of the court of Amenhotep III at Luxor.

Plate 18. View from the southwest corner of the court of Amenhotep III at Luxor at sunset.



sisting of a court surrounded by columns and Osiride statues, preceded by a pylon (V), a hypostyle hall with cedar columns, and another pylon (IV). Hatshepsut removed the wooden ceiling and erected her two obelisks in the rather narrow hall. Thutmose III (1504-1450 B.C.) rebuilt the ceiling to hide the obelisks of Hatshepsut, two halls between Pylons V and VI, and the famous Great Festival Hall to the east of the temple of Amun.

Amenhotep III (1408-1372 B.C.) built to the west a large pylon (III), preceded by an avenue of sphinxes. Ramses I (1315 B.C.) built a still larger pylon to the west (II) and connected it to the other by a colonnade. His son Seti I completed a huge hypostyle hall called "The-Great-Divine-Palace-of-the-Spirit-of-Seti-Merneptah-in-the-Temple-of-Amun." Ramses III (1198-1166 B.C.) built a complete temple near the foremost pylon, at right angles to the larger temple.

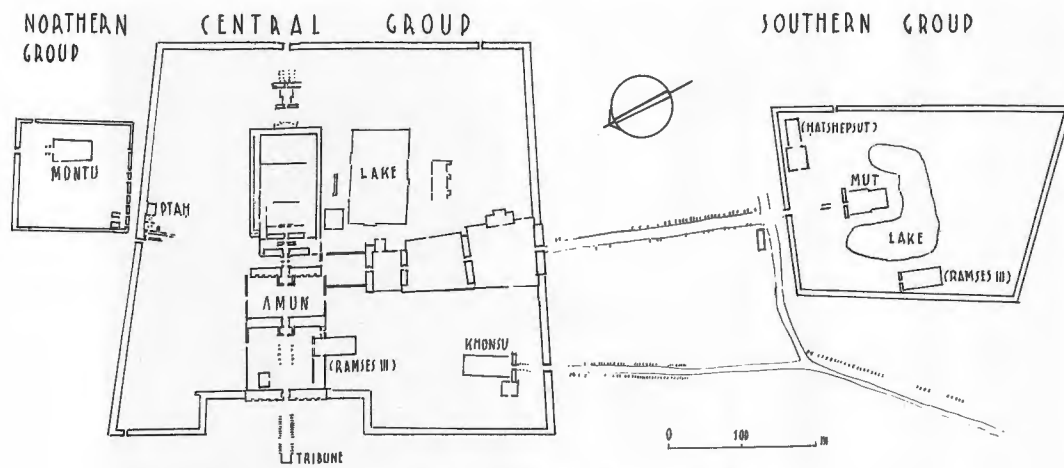
Later, the Libyan pharaohs (Twenty-Second Dynasty, 950-730 B.C.) began the construction of a large court bordered on two sides by a portico which was completed only under the Ethiopian and Ptolemaic dynasties.

Besides this large temple of Amun-Re' there are several other independent smaller temples built by pharaohs of the New Kingdom. The temple of Ramses III and the chapel of Seti II are embodied in the large temple. To the north are the temples of Ptah (Thutmose III) and Montu (Amenhotep III); to the south the temples of Kamutef (Hatshepsut), Amun-Re', and Mut (Amenhotep III), and the temple built by Ramses III as well as a series of pylons and (Pylon VII by Thutmose III, Pylon VIII by Hatshepsut, Pylons IX-X by Horemheb); and to the southwest the temple of Khonsu (Ramses III-XI). Other pharaohs contributed to the architectural growth of the site: Amenhotep IV, Thutmose III, and Ramses II, not to mention the later sovereigns until the Ptolemies. This complex is probably the best example of the growth of a temple by accretion during more than 1,500 years. Throughout that long span of time building activities never ceased. Courts fronted with pylons larger than the preceding one were added in front of the existing buildings. The resulting regularity of the huge complex implies the existence of a strict tradition and well-defined regulations in harmonic architectural design.

GENERAL LAYOUT (*fig. 132*). An appraisal of the general layout of the site could be achieved by considering the Great Temple of Amun as a focal center,



Plate 19. View looking north along the western double colonnade in the court of Amenhotep III at Luxor.



132. General layout of the temples at Karnak.

and that of his wife Mut as a secondary one connected to it by a long avenue of sphinxes and courts with no fewer than four intervening pylons. Each temple was surrounded by a large brick girdle wall enclosing other smaller temples. The temple of Montu, the earliest and original deity of Thebes, stands independently to the north within its own temenos wall and has its own avenue of sphinxes (pl. 22).

The street bordered with sphinxes and coming from the temple of Luxor branches off into a lateral avenue (E.) toward the entrance to the temple of Mut, before reaching the front entrance to the temple of Khonsu at the southeast corner of the main enclosure of the Great Temple of Amun. From the front pylon of the Great Temple and along its longitudinal axis an avenue of sphinxes leads to the landing quay or tribune. The N.W. orientation has no cosmic implication. Probably the riverbank formed the basis line upon which the longitudinal axis of the Great Temple of Amun was set perpendicularly. Directed to this temple as a pole of orientation were the nearby temple of Mut and that of Amun at Luxor, not to mention the mortuary temple of Hatshepsut on the opposite bank at Deir el Bahari. The unusual orientation of the small temple of Khonsu is accounted for by its use as a repository at the end of the long processional avenue from Luxor. The girdle wall around the Great Temple of Amun is trapezoidal in plan, (N. 530 m., E. 510 m., S. 510 m., W. 710 m.) with four gateways opening on two crossing axes and at least three



Plate 20. Colossal group of Ramses II and his wife Nefertari at the northern end of the great colonnade at Luxor, in the early morning.

Plate 21. Colossal group of Ramses II and his wife Nefertari at the northern end of the great colonnade at Luxor, in the sunset light (cf. pl. 20).



other secondary gates. Its perimeter of 2,260 meters was given as 13 stadia (2,308 m.) by Diodorus. The girdle wall around the complex of Mut is also on a trapezoidal plan. This unusual shape is also a result of the layout connection between both complexes by means of a curved processional avenue. The curvature of the latter was an attempt to comply with the traditional setting of transverse lines at right angles to the longitudinal axis. The pylons across the curved avenue between the temple of Amun and that of Mut are not parallel to one another, but set in slightly diverging directions. Architectural design could ally strict traditional norms to a versatile treatment.

I. THE CENTRAL GROUP. THE GREAT TEMPLE OF AMUN-RE²⁹⁸

The name *Ipet Iswt* defines the sacred precincts from the beginning of the Eighteenth Dynasty up to Amenhotep IV, between Pylon IV and the festival hall of Thutmose III.

The longitudinal axis of the temple is perpendicular to the riverbank, thus giving a W.-E. orientation. The site once occupied by the earlier buildings of the Middle Kingdom was left vacant and the pharaohs of the Eighteenth Dynasty built in front of it. Later buildings were added to the west, gradually approaching the riverbank.

In front of the main entrance was an elevated platform or tribune with a central socle bordered by a parapet wall with two small obelisks of Seti II (fig. 133) connected by an alley flanked by crio-sphinxes called "The Way of Rams" to Pylon I (pls. 23, 24). Another such tribune existed to the north of the temple of Montu. The landing quay was located much lower on the riverbank.²⁹⁹

Pylon I (112.78 x 15, 43.43 m. high) is of Ethiopian date or later, built of sandstone without mortar, left unfinished, with one internal staircase rising from the northern tower passing above the gateway to the southern tower. This pylon forms the façade to a large squarish court (84.12 x 99.40 m.) bordered on two sides by a portico with columns (Twenty-Second Dynasty). A constructional platform built of brick caissons enclosing tamped earth between retaining walls perpendicular to the pylon abutted against its faces. A central colonnade of eight huge open papyriform columns (Taharqa; 21 m. high) once formed a timber-roofed processional way or kiosk down the main

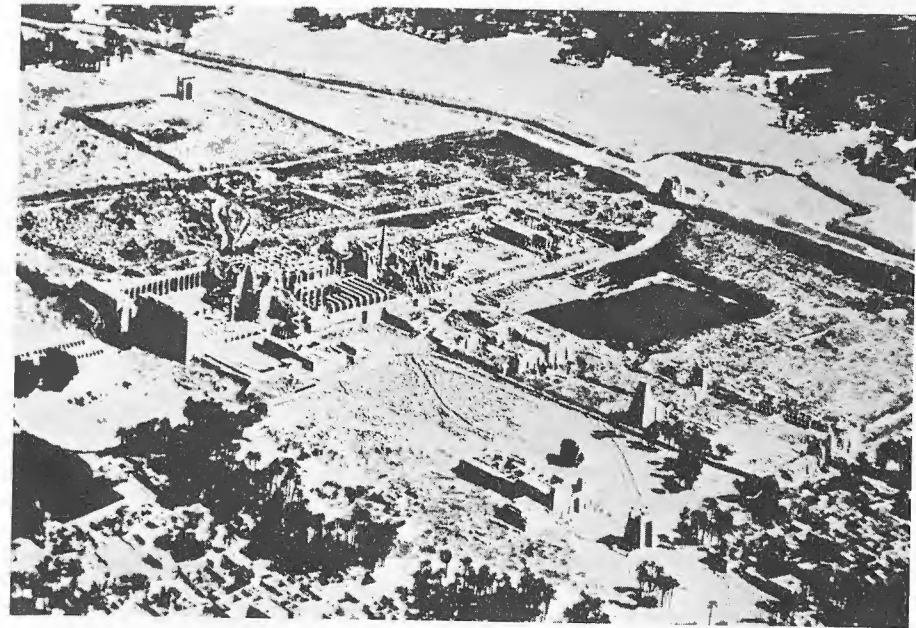
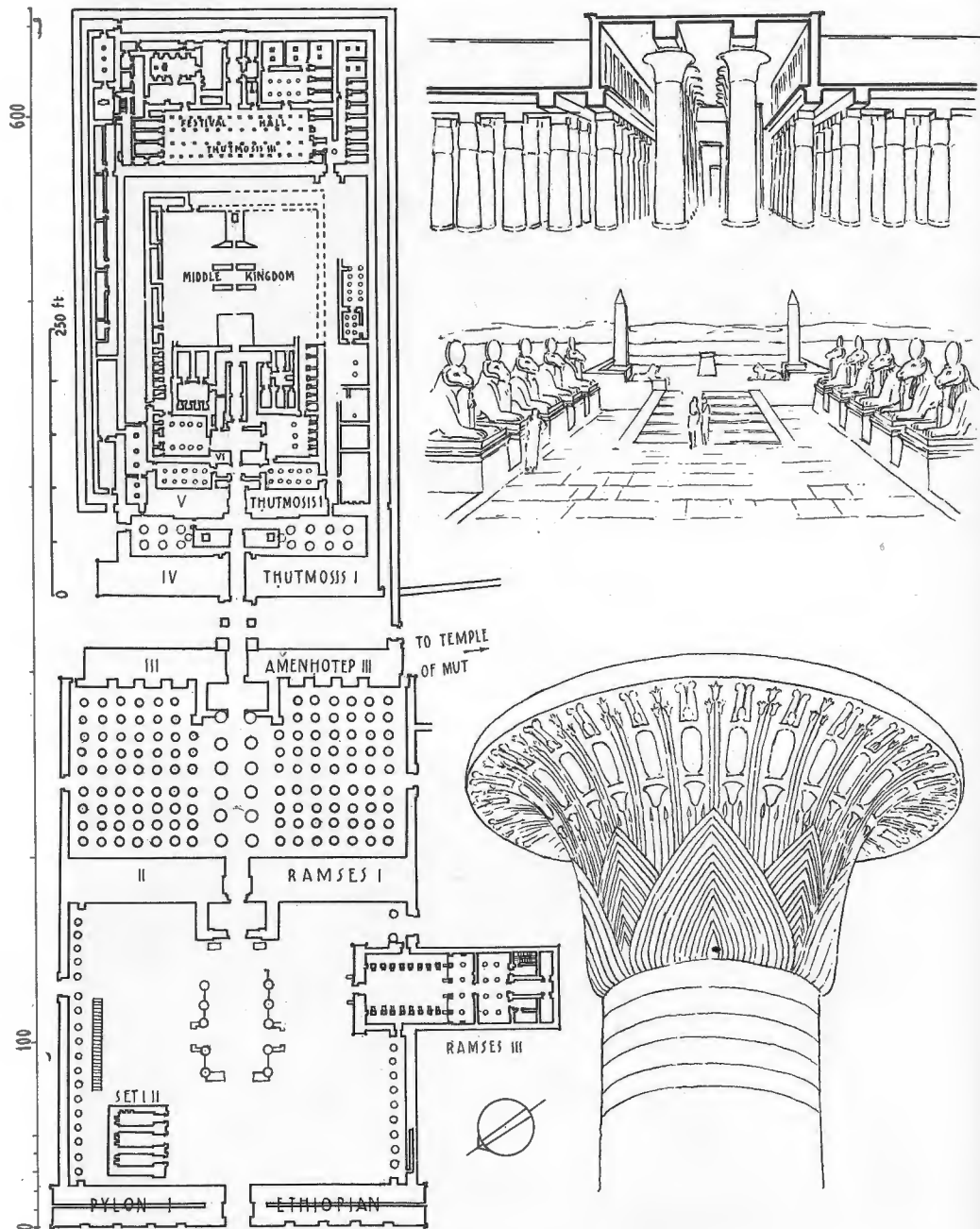


Plate 22. Air view of Karnak from the southwest (before 1945).

Plate 23. The processional alley of sphinxes and the tribune as seen from the top of Pylon I at Karnak; beyond, the Nile and Western Thebes.



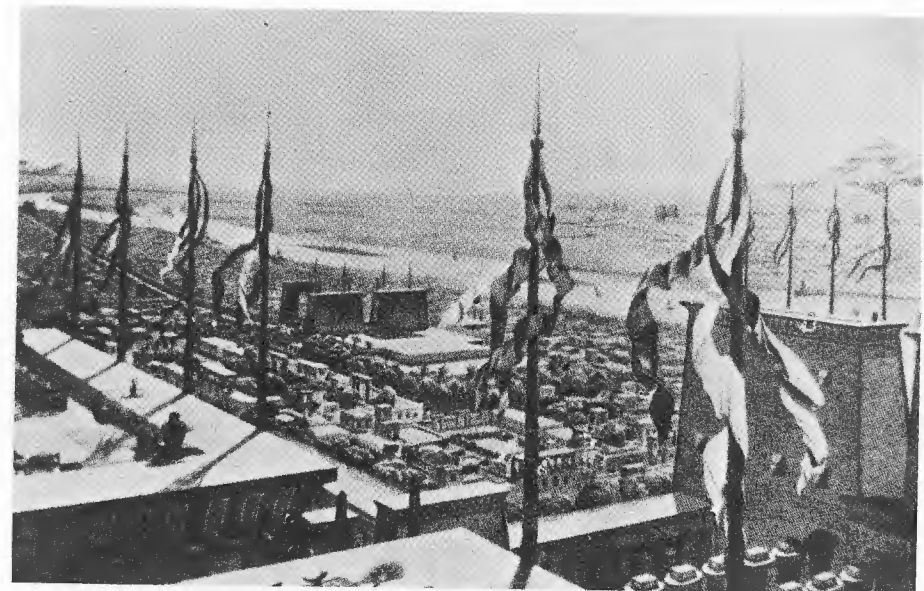


133. The Great Temple of Amun at Karnak: plan, restored perspective of the hypostyle hall, and of the tribune, and detail of an open papyriform capital from the hypostyle hall.



Plate 24. The processional alley of crio-sphinxes leading from the tribune to Pylon I at Karnak.

Plate 25. Restored perspective of Thebes as seen from the Great Temple of Amun-Re' at Karnak; in the background, Western Thebes and the peak of the Horn.



axis of Pylon II. It was paved with irregular slabs of granite and contained a pedestal built on a rectangular alabaster base. The kiosk served as a way station or repository for the sacred bark.

In the northern corner of the court stands the small repository of Seti II called "Castle-of-Seti-Merneptah-in-the-Temple-of-Amun," with three contiguous shrines for the barks of Amun, Mut, and Khonsu. It is similar to the earlier chapel of Thutmose III at Luxor. Seti II was probably the first to build westward. The repository served for the three barks on their voyages to Luxor, to the western bank, or to the festival hall of Thutmose III and would have allowed Seti II to profit by the ceremonies performed during the station of the barks. It was of sandstone on a socle of quartzite with niches in the rear containing representations of royal statues.

In the south corner of the court is the temple repository "temple-of-Ramses-heqa-Iwnw-in-the-domain-of-Amun" dedicated to Amun by Ramses III and built transversely to the longitudinal axis on a socle profiled as a cavetto cornice. It has been regarded, along with the temple of the same pharaoh dedicated to Khonsu, as an example of a simple typical cult temple from the New Kingdom (pl. 25). The façade is in the form of a pylon, in front of which stood two royal statues. The court is bordered on two sides (E., W.) by a portico with eight Osiride pillars of Ramses III, those to the west (local North) wearing the crown of the North (pl. 26), those to the east (local South), the crown of the South. Along the rear and at a higher level is an open vestibule fronted by four similar Osiride pillars between which runs a parapet 1.83 meters high, except for the central intercolumniation. A row of bud papyriform columns is set behind the Osiride pillars. The scenes on the walls picture the sacred processions.

The hypostyle hall is shallow, with two rows of four bud columns each. In its rear are three contiguous chapels for the boats of the triad and also a few rooms. The ceiling was at one level except for the sanctuary of Amun and its flanking rooms, so that a row of clerestory windows at the rear of the hypostyle hall lighted the back of the temple, with additional light provided by slots between the slabs of the ceiling. There was a system of water drains on the roof with three gargoyles on each side of the temple. The roofing slabs were placed perpendicular to the longitudinal axis, except above the vestibule.

Pylon II (98 x 14 m.) begun by Horemheb and finished by Ramses I has four grooves for flagstaffs in each tower and a vestibule preceded by two



Plate 26. The Osiride pillars on the north side of the court in the temple of Ramses III at Karnak (central group).

confronted colossi of Ramses II. A staircase in the northern tower rises to the top. The decoration begun by Horemheb was completed by his successors. A vestibule or porch similar to the one fronting this pylon is probably to be reconstituted as a structure in wood in front of every temple (cf. the screen walls in the temples at 'Amarna). The gateway or the pylon itself was called "Illuminating-Thebes."³⁰⁰

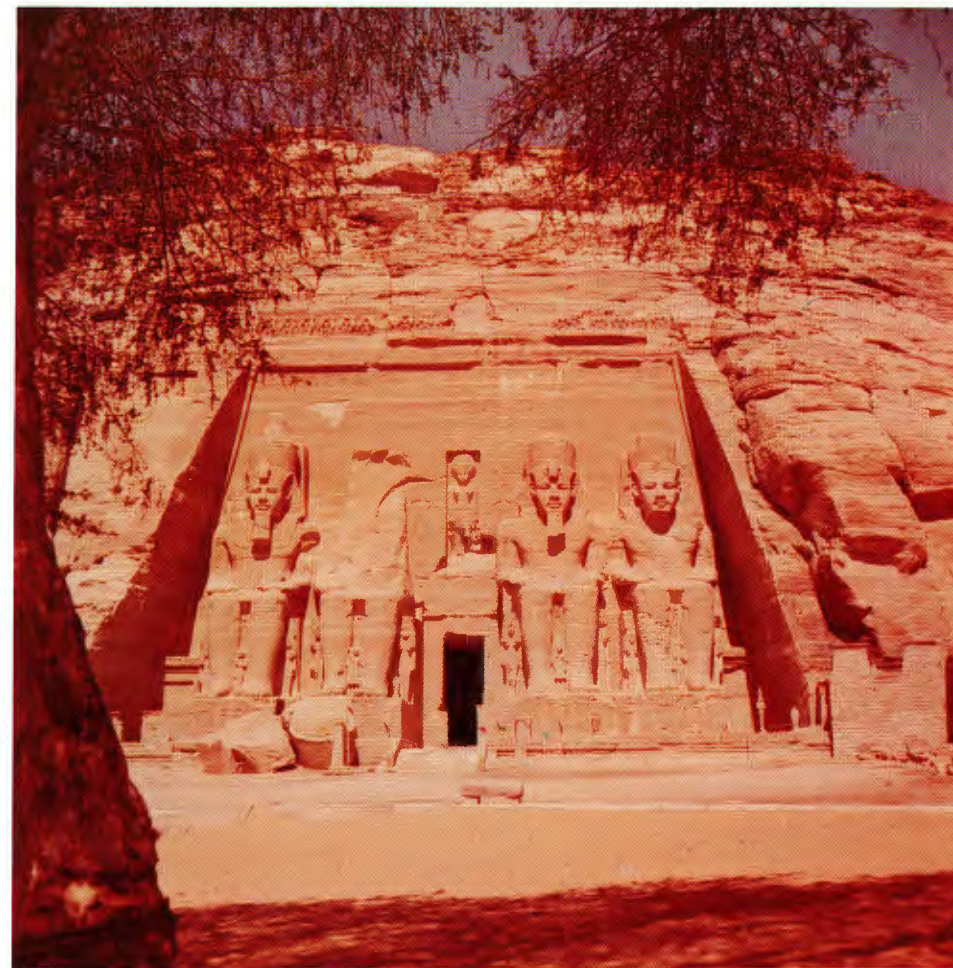
The great hypostyle hall (338 x 170 ft. [99.40 x 51.82 m.] deep) was "The-temple-Seti-Merneptah-is-luminous-in-the-House-of-Amun." It was described as "the resting place of the Lord of the gods, beautiful sojourn of the Ennead" and "the beautiful sojourn of the Ennead, where Amun rests, the place of appearance of the Lord of the gods at his annual feast." Its designation "Hall of the two crowns" points to the ceremony of the coronation being performed in it, as depicted in its wall scenes. One of the most momentous achievements of Egyptian architecture, it is the largest example of the typical hypostyle hall, and very similar to the Roman basilica. Its central nave (79 ft. high [24.08 m.]) is bordered by a row of 7 huge sandstone open papyriform columns (diam. 69 x 11.75 ft. [21.03 x 3.58 m.]) and two lower aisles (46 ft. high [14.01 m.]) with 60 bud papyriform columns in each (diam. 42 x 6.5 ft. [12.80 x 1.98 m.]). Excavations have disclosed a foundation wall under the first row of lower columns on each side of the central nave. This leads to its interpretation as the foundation of a wall enclosing the central alley of columns, before the two aisles were added. This would have been a colonnade forming the approach between Pylon II and Pylon III, similar to the colonnade in front of the temple at Luxor, and possibly dating from the same Amenhotep III, though nothing appears in front of Pylon III in the mural representing the cross section of the temple of Amun in the tomb of Neferhotep (Reign of Ay). At the top on each side of the central nave is a series of clerestory windows with stone gratings (pl. 27). It is noteworthy that the central nave gives the impression of having three aisles because the high walls and clerestory are carried upon the row of lower columns bordering this nave. The columns as well as the walls are covered with low reliefs and inscriptions from the reign of Seti I which represent mostly pharaohs in the presence of deities. About 400 wall scenes depict the coronation, baptism and foundation ceremonies, the childhood of Seti I, six scenes of the sacred barks on their pedestal (east of entrance) carried in procession or of the "divine arrival" on the shoulders of thirty priests wearing masks of hawk and jackal heads (west) and of sailing to



COLOR PLATE VIII. *Typical wall scene in low relief painted from the temple of Seti I at Abydos (see p. 218).* All the scenes on the walls, columns, and ceilings of the temples were carved in low relief and painted in the conventional colors of the Egyptian palette. The background is usually a gray blue or yellowish white. The scene shown here represents the rite of the erection of the Djed-pillar of Osiris by Seti I in front of the goddess Isis. The rhythmic perfection of the design, the balance of the graphic elements in a composition within their framing hieroglyphs, and the quality of the carving typical for the wall decoration in this temple mark the climax in the evolution of graphic art and monumental sculpture in the Empire.



COLOR PLATE IX. *The Great Temple of Amun-Re' at Karnak seen across the Sacred Lake at sunset (see p. 253).* The eye wanders in amazement from the obelisk of Hatshepsut (*right*) to that of Thutmose I, to the hypostyle hall and to the impressive mass of Pylon I of the Kushites. One wonders what must have been the aspect of this huge complex faithfully mirrored in the lake when the walls were still gorgeously clad in their painted low reliefs, the pylons and their flagstaffs increasing in stature like many sentinels posted along the approach and the obelisks glittering in their sheath of electrum as if "piercing the heavens."



COLOR PLATE X. *Rock temple of Re'Horakhty by Ramses II at Abu Simbel in Lower Nubia (see p. 308).* The façade offers the unique solution of adapting the pylon with its fronting colossi from the typical cult temple of the Empire to a temple entirely cut from the rock of the western cliff. In a recess in the shape of one tower of a pylon two pairs of colossal statues of Ramses II *ca.* 20 meters high flank the falcon-headed Re'Horakhty carved in high relief in the niche above the doorway. This statue with that of Ma't and a scepter Wser form a group to be read as Wser-Ma't-Re', the prenomen of the pharaoh. Surmounting the cavetto cornice is a band of 22 cynocephali raising their hands in worship to the rising sun. The central stairway flanked by two recesses for ablution basins leads to the terrace bordered by a cavetto cornice and a balustrade behind which is a row of falcons and statues of Ramses II. At the north end (*right*) is the miniature pylon of a hypaethral shrine of the sun. In addition to its harmonious design the façade shows originality in the forceful architectural statuary with excellent portraiture on a colossal scale.



COLOR PLATE XI. *View toward the valley from the north vestibule on the second terrace of the temple of Hatshepsut at Deir el Bahari (see pp. 186, 331).* Nowhere in the vast terraced mortuary temple of Hatshepsut is there a more vivid impression of classicism in the style as in the vestibule at the north corner of the second terrace. From behind the 16-sided columns stretch the similar columns of the unfinished north portico in graceful yet forceful simplicity, pointing as though to Ipet-Iswt, the Great Temple of Amun-Re' far down in the blue valley.



Plate 27. *View from the aisle of the hypostyle hall at Karnak (Great Temple of Amun-Re'), showing the clerestory windows bordering the upper part of the nave.*

Luxor. Each column consists of a base with eleven or twelve drums of unequal height, each in two halves topped with an abacus. The cross section of both types of shafts is always circular and the segments of alternate drums are at right angles. The architraves above the nave and the first two rows of lower columns on each side are parallel to the longitudinal axis while the others are transverse. In front of Pylon III a vertical wall was built, leaving the flagstaff recesses clear, to support the western ends of the architraves. On the exterior of the hypostyle hall are scenes of historical interest recording victories of Seti I (north wall) and Ramses II (south wall) over Palestine and Libya. There are scenes of Ramses II campaigning against the Hittites at the battle of Qadesh which record the courage of the young sovereign who fought for his life and was saved by Amun.

Pylon III (Amenhotep III) also has four vertical recesses for flagstaffs in each tower and a vestibule. The floor of its doorway "Double-gateway-of-the-horizon-of-the-Lord-of-the-Universe" was "adorned with silver."³⁰¹ It is from the foundations that numerous blocks of earlier chapels of Senusert I, Amenhotep I, Haptshepsut, Amenhotep II, and Thutmose IV were extracted. They had been used as filling for foundation walls. The pylon replaced a pair of obelisks of Amenhotep II. It is in sandstone, with strong batter, and has a staircase rising northward from the southern tower. The court behind it is extremely shallow and contained two pairs of obelisks (Thutmose I and III, pl. 28), those of Thutmose I having once marked the front entrance to the temple.

Pylon IV built by Thutmose I who was called "Amun-Re', Mighty-of-Prestige," formed the front of the temple proper as built by Thutmose I under the supervision of the architect Ineny. It is followed by a shallow court with two rows of columns. These replace the wooden columns of Thutmose I which supported a wooden roof. Thutmose III removed the colossi in Osirian garb of Thutmose I which abutted on the inner side of the walls around the court of the remains of the Middle Kingdom and set them against the four walls in the hall between Pylon IV and Pylon V. This hypostyle hall, called "Splendid hall of papyriform columns" (*Wadjit shepeset*), was a kind of jubilee hall. After removing the wooden ceiling, Hatshepsut erected two obelisks of which the northern is still standing 29.50 meters high and the southern has fallen down (pl. 29), but Thutmose III surrounded these with sandstone walls to conceal them and placed a stone ceiling over the papyriform columns. None could have access to this part of the temple except the high priests and the king who



Plate 28. Top of an obelisk with scene of Amun-Re' and Thutmose III (Karnak), originally standing against the eastern doorway of Pylon III.

Plate 29. Upper part of the south obelisk of Hatshepsut between Pylon IV and Pylon V. Thutmose III hammered out the name of the queen and substituted his own. Seti I restored the name of Amun-Re' hammered out by Akhenaten, and added his own (left figures).



had first to perform the "royal ascent" toward the place of enthronement of Amun to renew his consecration. This rite was performed in a room open at the front south of Pylon V near the statue of Amun-Re' imposing its hands on the head of the kneeling pharaoh. The statue was in a naos opening north on a socle of sandstone 0.80 meter high, flanked on either side by a row of four square and four Osiride pillars against the east and west walls of the room.

Behind Pylon V (Thutmose I), called "Amun-Senior-in-Prestige," are two antechambers flanked by a courtyard with sixteen-sided columns and jubilee statues.

Pylon VI (Thutmose III), called "Menkheperre'-Beloved-of-Amun-Great-of-Prestige" forms the frontage to the hall of records, whose ceiling rested on two massive monolithic granite pillars decorated in high relief on the side with the heraldic plant for Upper Egypt, the so-called iris, and with the papyrus for Lower Egypt (pls. 30, 31). On either side is a court of Thutmose III with bundle papyriform columns. The wall scenes are all connected with the preparation and consecration of offerings.

The sanctuary of the temple stood behind the first hall of records and is now occupied by a granite shrine for a sacred bark of Philip Arrhidaeus (323-317 B.C.), probably on the model of an earlier one of Thutmose III. On both sides are the rooms of the second hall of records, decorated with scenes representing the military feats of valor of Thutmose III. The original structure built by Hatshepsut consisted of a chapel for the bark of Amun and two courts of offering flanked by rooms.

The site of the temple of the Middle Kingdom extends to the east of the sanctuary.

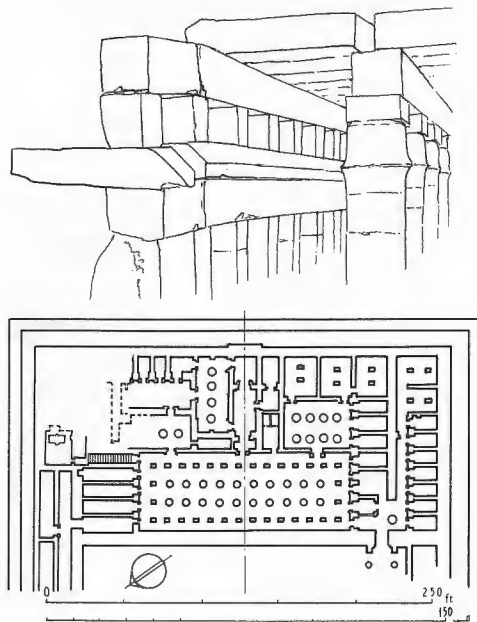
THE PRISON. In two texts dating from Seti I and Rames II it is mentioned that thieves and criminals in Thebes were imprisoned in the "dungeon of the Gate" of the temple of Amun. This was not the only prison but was the one used for those committing crimes against Amun. At Thebes there were prisons depending from the State. In the violation of the settlements of Seti I³⁰² as well as in the robberies of the royal tombs at Thebes³⁰³ the character of the crime could have brought it under the jurisdiction of the clergy of that god. We know that captives from military campaigns were settled in strongholds by Ramses III.³⁰⁴ The vizier Rekhmire' mentions the "great prison" in his famous description of his official duties.³⁰⁵



Plate 30. The two granite pillars symbolizing Upper and Lower Egypt in the Hall of Records of Thutmose III (Great Temple of Amun-Re' at Karnak).

Plate 31. Group of Amun and Amunet in the Hall of Records (Great Temple of Amun-Re' at Karnak).





134. Plan of the Festival Hall of Thutmose III and perspective of the upper part of the hall.

Prisons are known to have existed in Coptic and European monasteries. In Constantinople the "important enemies of the State could be imprisoned for their sins" in monasteries.³⁰⁶

THE FESTIVAL HALL OF THUTMOSE III "MENKHEPERRE-IS-BRILLIANT-OF-MONUMENTS" (EGYPTIAN *Akh-Menu*).³⁰⁷ This is set transversely at the rear of the Great Temple, inside the girdle wall of Ramses II. It was built as a Heb-sed jubilee temple as an ex-voto to the deities of Egypt for the power and glory they had given to Thutmose III. It was entered from the rear of the Great Temple through a portal in the southwest corner opening onto an L-shaped vestibule (fig. 134). To the south is a row of contiguous cells, the two rearmost of which are two-storied open pillared rooms. From the vestibule one has access axially into the hypostyle hall ("intermediate hall," *herit ib*) of a unique type. It has a central nave and two aisles on either side returning at the small ends (144 x 52 ft. [43.89 x 15.85 m.]). The nave is bordered on either side by ten tent-pole columns, a unique stone imitation on a large scale of a wooden tent pole with a shaft narrowing at its lower part and a bell-shaped capital. Such a wooden pole formed the usual support of the Heb-sed pavilions used in the jubilee festivals³⁰⁸ (pl. 32). The two aisles on either side of this nave are



Plate 32. The nave with its tent-pole columns in the Festival Hall of Thutmose III at Karnak.

separated by a row of square pillars which return at both small ends of the rectangular plan. These 32 pillars carry architraves topped with a row of clerestory windows between the ceiling slabs over the nave and the lower ones over the aisles. The latter slabs project as chamfered cantilevers inside the nave to reduce the internal stresses in the slabs due to the bending moments, a remarkably ingenious device in structural science. Originally there was a wall bordering the outer aisle and supporting the lower ceiling. There is no evidence from the decoration that the sacred barks were carried farther than the entrance vestibule, whose corner is rounded to allow for turning the barks. The hypostyle hall was transformed into a church (sixth-seventh centuries A.D.). Three contiguous deep chapels border the north end of the hall. They were dedicated to Amun, Mut, and Khonsu.

There is a transverse axis from the mid-length of the hall running east, along which are three rooms opening onto the so-called "botanic room," whose walls are decorated with species of animals and plants from Syria, "every exotic plant and every beautiful flower which was in 'god's land.'" This transverse chamber has a central row of four papyriform bundle columns, with two sandstone sphinxes between them, fronting panels of two engaged columns in the rear wall. It forms the antechamber to the sanctuary behind: this is a long rectangular hall N.-S. with a sanctuary at the north end containing a granite altar and a naos in the rear wall, and on either side in the hall itself four niches which were shut by means of wooden doors. The decoration is similar to that in the first room, representing plants and animals from Syria. Both vestibule and hall should probably be interpreted as dedicated to a cult of the divinity in his potentiality of Nature god of the foreign subjected countries. It is assumed that Thutmose III brought back specimens of the fauna and flora of the Asiatic lands he conquered and set them in this sanctuary, and they were represented on its walls (see fig. 134).

To the southeast of the hypostyle hall is a large hall with eight sixteen-sided columns, bordered to the south by three narrow rooms and to the east by two-storied pillared storerooms for offerings.

The architectural style, characterized by its simplicity and unity, is similar in classical beauty to that of Hatshepsut's temple at Deir el Bahari. Many of the features of this monument point to a high degree of aesthetic perfection. The inverted taper of the shaft of the columns in the hypostyle hall could be a device to induce an illusion of perspective, so that it appears from the floor as a

perfect cylinder. The hall is probably the most adequate example of the "oecus aegyptius" described by Vitruvius (VI, 8-9), which he regarded as the prototype of the basilica. The plan features returning aisles and proportions of width to length approaching those of the early basilica at Pompeii. In the latter, however, the row of pillars was replaced by engaged columns lower than the columns about the nave.

THE SACRED LAKE AND ITS SCARAB. To the south of the girdle wall of Ramses II is a rectangular Sacred Lake dug by Thutmose III, the largest of its kind, whose sides are lined with stone and provided with stairways descending into the water (color plate IX). At the northern corner, beyond the embankment, is a huge granite statue of a scarab dedicated by Amenhotep III at Kom el Heitan to the god "Khepri coming out of the earth," the sun growing toward noon (pl. 33). The area was probably reserved for a sun ritual similar to that performed in other temples at Thebes, in the special court set to the left when looking to the main sanctuary (cf. mortuary temples of Hatshepsut, Ramses II, Ramses III).

THE TEMPLE OF AMUN-RE'HORAKHTY. Toward the end of the Eighteenth Dynasty there was in the longitudinal axis of the temple of Amun-Re' east of the festival hall of Thutmose III a "single obelisk," *tekhen wo'ty*, 33 meters high, of Thutmose III forming the main element of a hypaethral sanctuary with a hypostyle hall on four polygonal columns.³⁰⁹ To this Bakenkhonsu, architect of Ramses II, added a peristyle court with polygonal columns and two Osiride pillars, two lateral doorways dedicated to Mut and Khonsu, and, in the brick wall with undulating courses, a gate named "Great Door 'Userma't-re'-and-Amun-are-those-who-listen-to-prayers,'" and also "The Upper Doorway of the Domain of Amun." Farther east on the same axis a gateway opened in the girdle wall fronted externally by two obelisks and two sphinxes of Ramses II. This temple of the rising sun was therefore in correlation with the Festival Hall of Thutmose III, whose chthonian (southeast halls of Sokar) and solar (northeast) aspects defined the eternal cycle of rejuvenation.

COSMIC SYMBOLISM OF THE TEMPLE OF AMUN-RE' AT KARNAK. In principle every Egyptian temple imitates the world, its floor representing the earth, its ceiling the starry sky, and its columns the growing plants. In the temple of Amun-Re' the cosmic symbolism found its fullest expression during the reign of

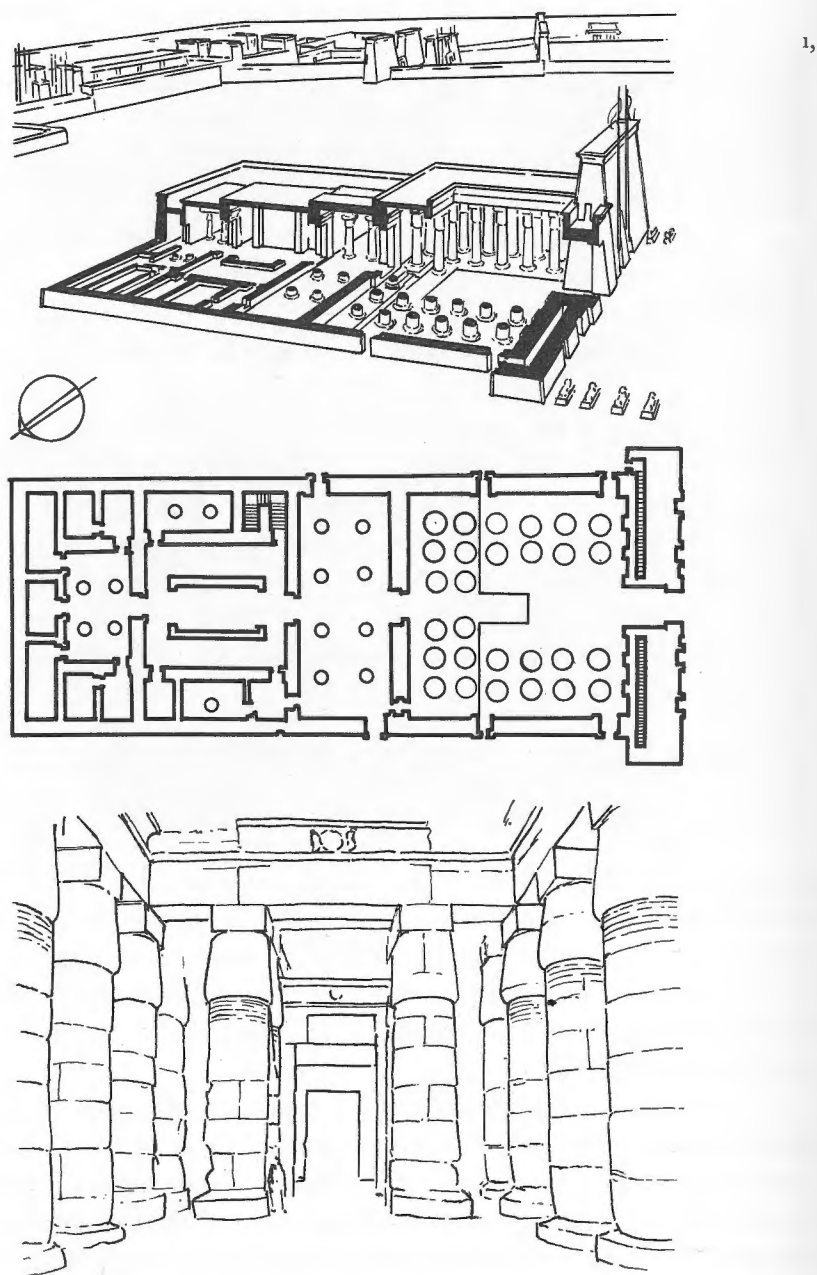


Plate 33. Colossal scarab in the north corner of the Sacred Lake at Karnak.

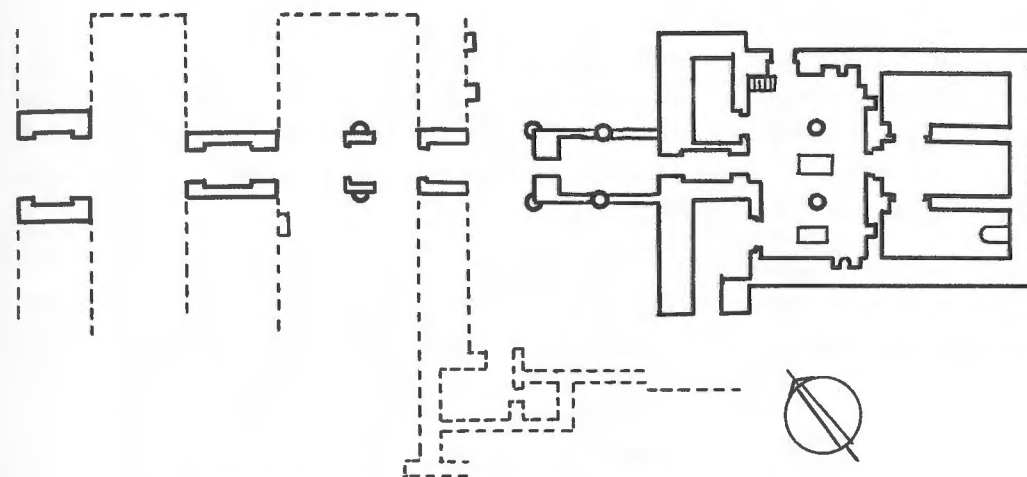
Thutmose III.³¹⁰ The temple then formed a complete entity oriented west-east from the entrance located at Pylon IV to the eastern temple dedicated to Amun-Re'Horakhty and the eastern gateway. This gateway opened through the wavy courses of its girdle wall and represented the point where the first rays of the rising sun darted through the waters of the Nun. A fragment of lintel from the gate of Pylon VI depicts Thutmose III worshipping Amun-Re' "at the ninth hour" which is the hour when the sun in its daily voyage enters the "Field of Reeds" and rests at the top of a mound or stairway. In this field, allied to the "Field of Offerings," the blessed deceased reaped bountiful harvests. The elements of this description can be recognized in the bark-chapel surrounded by the halls of offerings and the offering-chapels (*karw*) of the pharaohs. The complete voyage of the sun in its various stages from the east to the west is represented in the corresponding parts along the axis of the temple: the eastern temple whose doorway was "the upper doorway of the Domain of Amun" symbolizing sunrise at the first hour, the bark on its pedestal in the sanctuary symbolizing the sun resting on its mound at the ninth hour, the area between Pylon VI and Pylon V as the tenth hour, and that between Pylon V and Pylon IV as the eleventh hour from where the sun proceeds westward to set at the twelfth hour.

THE TEMPLE OF KHONSU ("TEMPLE OF RAMSES-HEQA-IWNW-IN-THE-DOMAIN-OF-KHONSU"; LATER NAMED *Benenet*). The importance of this temple in the general layout is indicated by its location just beyond the point where the avenue (13.8 m. broad) lined with human-headed sphinxes built by Nektnebef leading from Luxor to Karnak branched off to the temple of Mut. It is situated within the southwest corner of the great girdle wall that surrounds the precincts of the Great Temple of Amun-Re'. Together with the two other temples of Ramses III at Karnak it is regarded as an example of a typical cult temple in the New Kingdom (fig. 135).

The plan is rectangular, nearly symmetrical (240 x 96 ft. [73.15 x 29.26 m.]). A portal, restored by Ptolemy Evergetes I, opens in the girdle wall onto a court bordered by crio-sphinxes and columns. Beyond a pylon (105 x 33; 59 ft. high [32 x 10; 17.98 m. high]) with four vertical recesses for flagstaffs, were two porches with wooden ceilings on columns. The court, a "feast court" made by Herihor (Twenty-First Dynasty), is surrounded on three sides by a portico with double rows of bud papyriform columns. Of its west wall is a scene



135. Restored sectional bird's-eye view, plan, and view of the court of the temple of Khonsu, Central Group at Karnak.



136. Plan of the temple of Ptah, Central Group at Karnak.

depicting Pylon II. The rear of the court is at a higher level, forming a terrace carrying twelve columns. Four lateral doorways provided for the free circulation of crowds on festival days. The transverse hypostyle hall named "Wearing-the-Crowns" (*wjjes kha'w*) has eight papyriform columns and beyond it is the sanctuary that features the bark-chapel of Khonsu. The central columns of the hypostyle hall were taller than those on either side, and the resultant difference in the level of the ceilings above them served to accommodate clerestory windows. The hall was built by Ramses XI, who allowed the high priest Herihor to be represented with him in the offering scenes, a feature proving the decline of the royal power of the last Ramesside pharaoh. Flanking the sanctuary are a solar hall to the west and an Osirian one to the east. A small transverse hall with four sixteen-sided columns, flanked by two double rooms and communicating with three rear rooms, was built behind the sanctuary by Ramses III and decorated by Ramses IV.

THE TEMPLE OF PTAH ("TEMPLE-OF-PTAH-SOUTH-OF-HIS-WALL-IN-WASET"). Built in sandstone by Thutmose III it abuts on the inner wall of the northern side of the girdle wall near its northern gateway and is dedicated to Ptah, the god of Memphis. It is approached through five gateways, a colonnade, and a small pylon built by Thutmose III on the site of an earlier temple of the Middle Kingdom in wood and brick restored by Shabaka (Twenty-Fifth

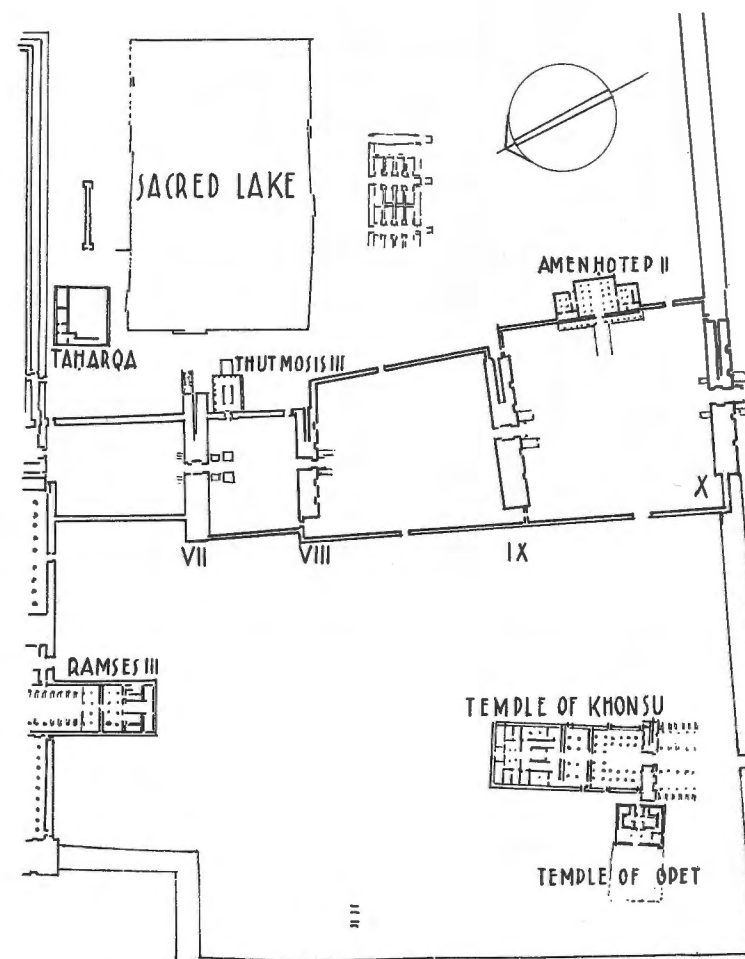
Dynasty) and the Ptolemies. A shallow court with a portico on two sixteen-sided columns precedes an axial offering-table hall³¹¹ flanked by two lateral shrines for Ptah (N.) and Hathor (S.) (fig. 136). A slot in the ceiling of each shrine provided very impressive lighting that fell on the statues set in it. It is famous for the statue of Sekhmet, the consort of Ptah with a lioness' head, replaced in situ in the southern room.

THE AREA SOUTH OF THE GREAT TEMPLE OF AMUN-RE'. Between the central court of the Great Temple of Amun-Re' and the façade of the temple of Mut to the south was a sequence of four courts with four intermediate pylons: Pylon VII of Thutmose III, Pylon VIII of Hatshepsut, Pylon IX of Horemheb, and Pylon X of Horemheb. Pylon X stretches on the alignment of the south side of the girdle wall, and beyond starts an avenue more than 310 meters long with *ca.* 120 crio-sphinxes (ram-headed). This avenue meets toward its southern end with another avenue 13.80 meters wide of human-headed sphinxes of Nectanebo connecting it to the main avenues of sphinxes running between the temple of Luxor and that of Khonsu at Karnak.

Access to the southern group is provided by an approach from the central court between Pylon III and Pylon IV, which also gives access to the temple of Ptah near the northern gateway. The area to the south of this central court is of traditional importance since in it were two temples, one from the Middle Kingdom, demolished by Thutmose III. This importance is corroborated by the fact that under the last Ptolemies the clergy buried their discarded sacred statues (779 of stone and 17,000 of bronze) in the court between the Great Temple of Amun-Re' and Pylon VII, and by the important historical inscriptions of Ramses II and Merneptah on its west and east walls.

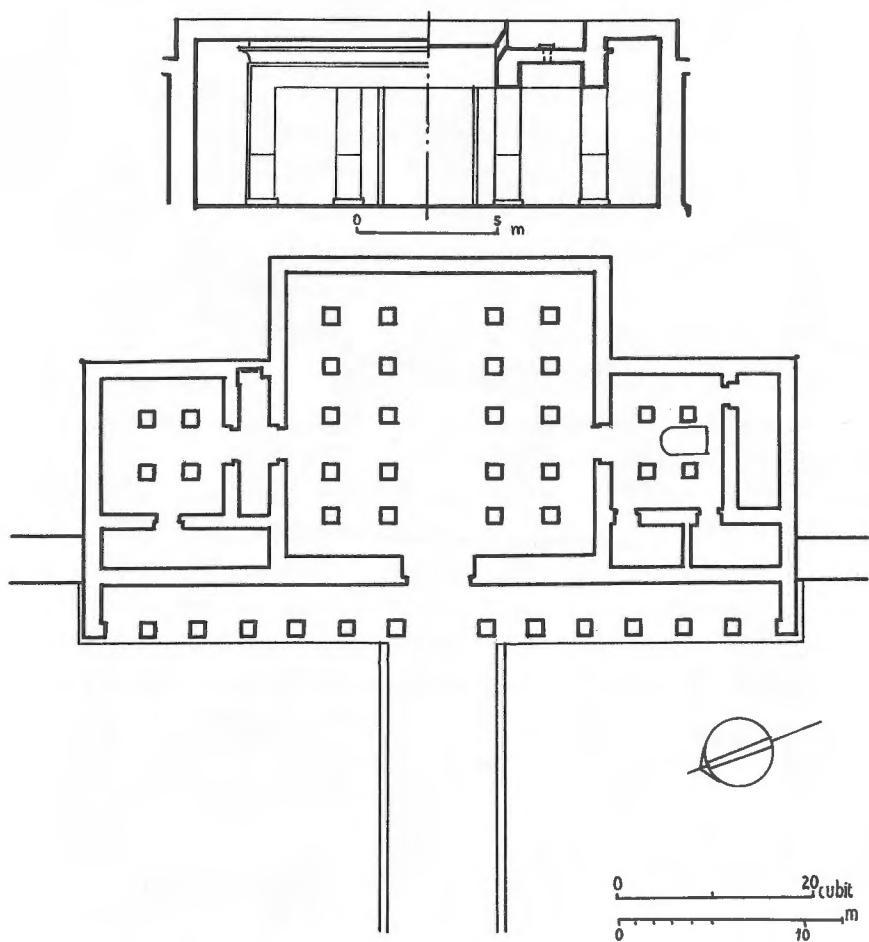
The connection of the temple of Amun-Re' to the southern gateway and to the northern one is by means of a curved alley featuring, to the south, a series of courts with intermediate pylons set in radiating directions perpendicularly to the curve (fig. 137). The theoretical center of curvature of the axis of the alley is to the south of the longitudinal axis of the temple of Amun and is much nearer the temple than is the point of intersection of the hypothetical projections of the southern and northern sides of the trapezoidal enclosure wall. This is a clear instance of the use of curved axes in the layout (cf. temple of Luxor).

THE TEMPLE OF AMENHOTEP II. This temple adjoins the fourth court, between



137. Connection between the Great Temple of Amun and that of Mut at Karnak.

Pylon IX (Horemheb) and Pylon X (Horemheb). It is a jubilee temple,³¹² nearly symmetrical in plan and very shallow and broad, erected on a platform crowned with a cornice. Such a socle would be a symbolic substitute for the girdle wall topped with a cornice which usually surrounds the sacred precincts. A ramp ascends to a portico with twelve pillars with antae. In the square hypostyle hall four rows of five square pillars each form a central nave bordered on either side by two aisles. In the passage along the inner face of the wall an architrave with cornice crowns the pillars, an indication that these should be regarded as forming an independent pillared chapel within the hall. From the low-relief decoration it can be deduced that the sanctuary of Amen-

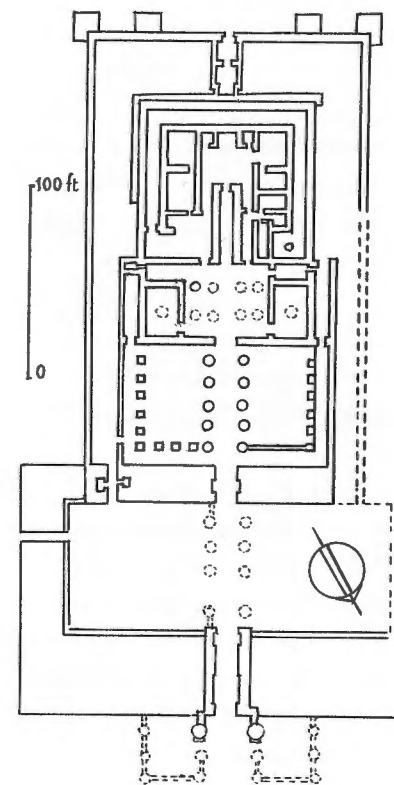


138. Temple of the jubilee of Amenhotep II, Central Group at Karnak.

hotep II was rebuilt by Seti I who closed the doorway in the east side (fig. 138). This was no longer a jubilee chapel but a temple to Amun, and the back doorway was replaced by a false-door, which gives it some resemblance to the reception hall in palaces. The original peripteral temple was "The Temple of 'Aakheperure'-Amun-rejoices-when- . . . to-behold-the beauty-of-Thebes."

II. The Southern Group

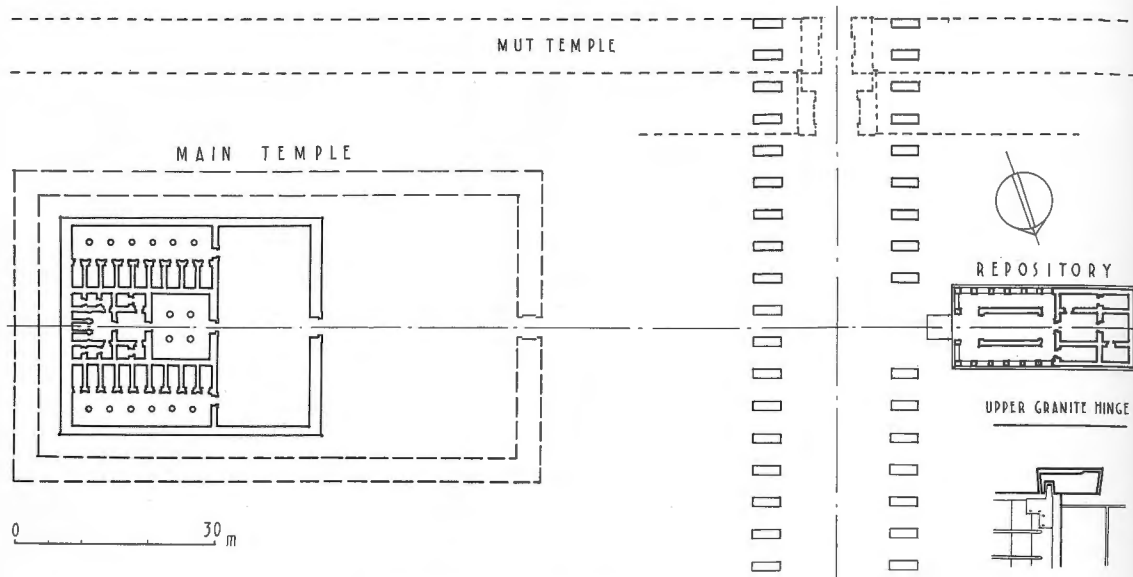
THE TEMPLE OF MUT (AMENHOTEP III).³¹³ This, the largest temple in the complex at Karnak after that of Amun, is dedicated to his wife Mut and connected to it by a large processional avenue. The temple was "The House



139. Plan of the temple of Mut, Southern Group at Karnak.

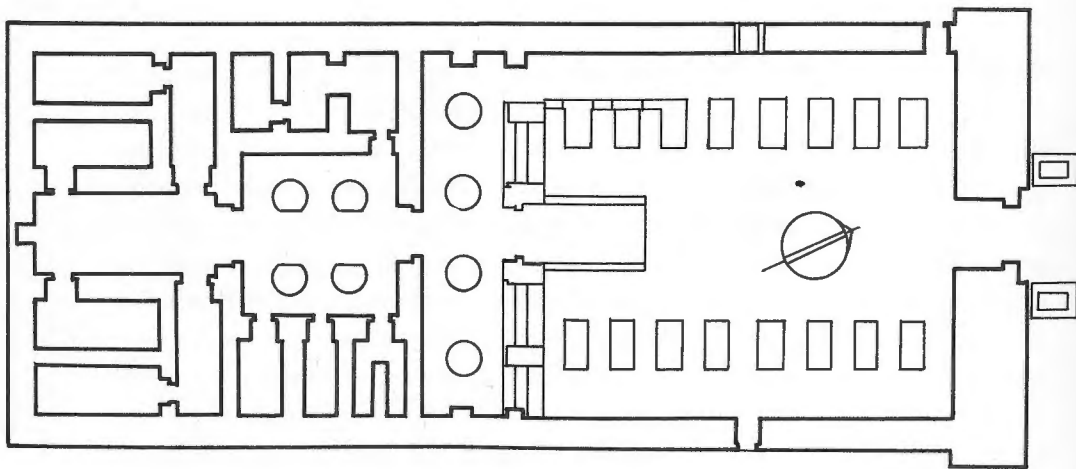
'Making-joyous-Isherw' " in a Ptolemaic inscription.³¹⁴ The plan is symmetrical (N.-S.), fronted by a pylon (Seti II), preceded by a Ptolemaic porch on pillars decorated with Bes figures (fig. 139). A transverse forecourt, halved by a processional avenue bordered with columns, precedes the temple proper. A second court bordered on three sides by a pillared portico and having a central processional avenue with Hathoric columns continuing the outer one contained numerous seated statues of Sekhmet, the lion-headed goddess. The hypostyle hall with eight papyriform columns is flanked by two rooms and is connected with the bark-chapel open at both ends and surrounded by various dependencies. The very massive enclosure surrounding the temple is bordered on its three rear sides by a curious horseshoe-shaped lake later called Isherw, after which Mut is "Mut the Great, Lady of Isherw."

A girdle wall (Ptolemy Philadelphus) enclosed the precincts of the temple of Mut and also that of Ramses III and that of Amun-Kamutef.



140. Plan of the temple of Kamutef at Karnak.

141. Plan of the temple of Ramses III, Southern Group at Karnak.



THE TEMPLE OF AMUN-KAMUTEF (HATSHEPSUT, THUTMOSE III [?]).³¹⁵ Abutting on the south side of the temple of Mut is a temple complex dedicated to Amun-Kamutef, a form of Amun in his potentiality of fertility god. It is composed of two buildings set opposite each other and flanking the alley of sphinxes laid out by Hatshepsut, between the temple of Mut and Pylon X of the temple of Amun (fig. 140). Both buildings are on the same longitudinal axis (E.-W.), the one to the west being the chapel used as the ultimate repository in the procession of the sacred bark.

The repository consists of a peripteral chapel, with a shrine for the bark, and a second part with a few rooms. The latter part was transformed at a later stage into a second repository for a bark and the whole building was enclosed within a brick wall.

The main temple to the east of the alley of sphinxes is a much larger building, consisting of a transverse court and a central nucleus flanked on its northern and southern sides by a columned portico fronting nine contiguous chapels. The nucleus is composed of a hypostyle hall, a vestibule or court (?), and a pronaos with three contiguous shrines at the back. It seems that the vestibule was flanked on either side by a chapel, while the rooms to the north and south of the shrines served as magazines. The nine contiguous shrines in each of the north and south sections contained royal statuettes (?).

The temple complex in its first stage was built by Hatshepsut, but an annex (stalls for sacred bull [?]) was added on its northern side, while on its longitudinal axis in the court rows of columns and two rows of smaller columns with screen walls on the front façade emphasized the central approach. The date of the addition to both the repository and the main temple could be Hatshepsut's or Thutmose's reign.

It has been presumed that the procession started from the royal palace, not far from the Karnak temples, and entered the main temple where it collected the sacred statue, the lettuce plants, a white sacred bull, symbols, and royal statuettes. It then proceeded to the repository opposite for certain rituals and turned to come back into the main temple.

THE TEMPLE OF RAMSES III CALLED "THE TEMPLE-OF-USERMA'TRE-MERYAMUN-IN-THE-DOMAIN-OF-AMUN-IN-THE-CITY" (fig. 141). Located to the southwest of the temple of Mut is one similar to the other small temples of that pharaoh at Karnak, exemplifying the typical cult temple. It is oriented N.-S., having a

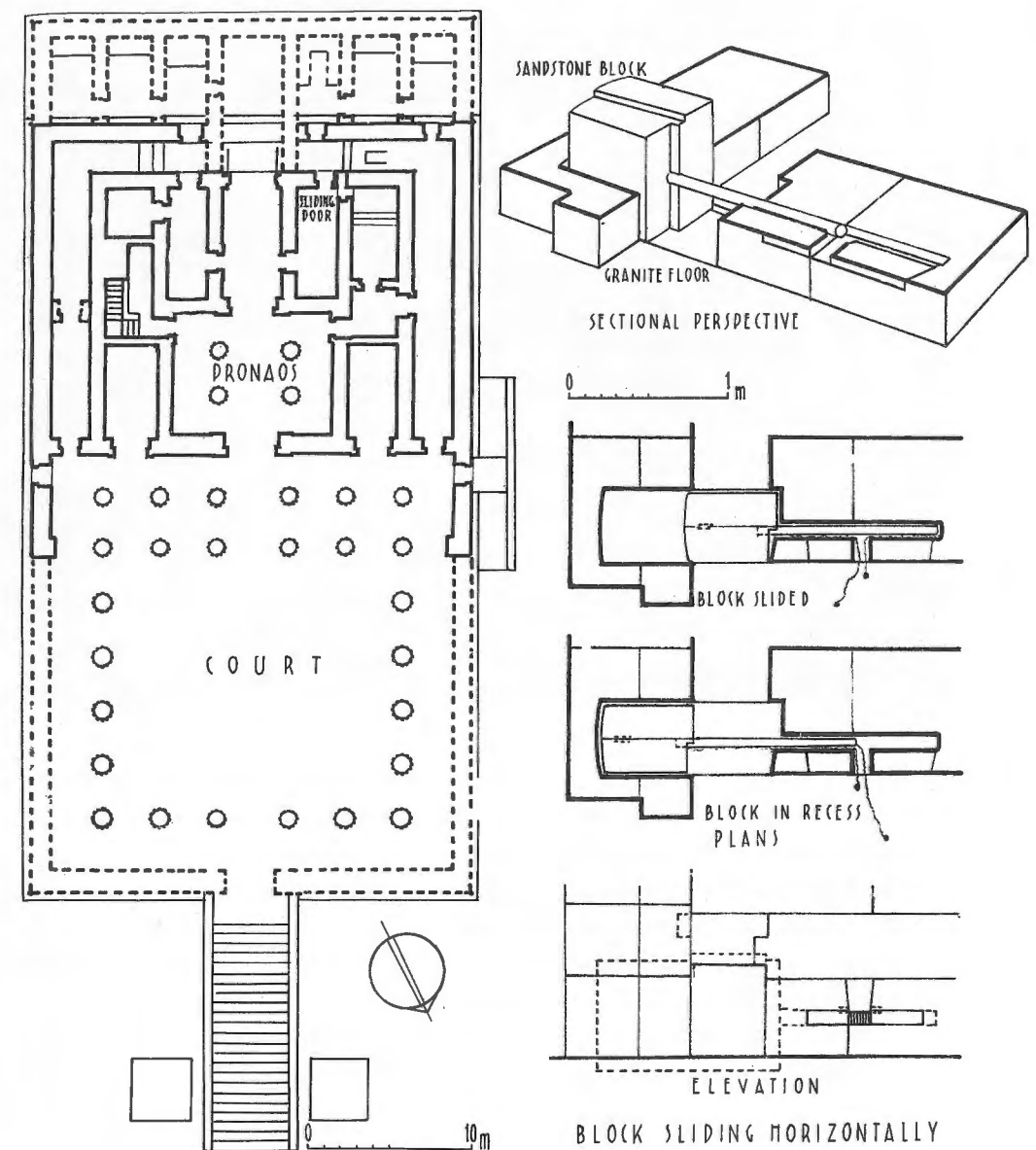
pylon with two statues of the pharaoh flanking the entrance and decorated in the customary way with battle scenes of Ramses III in Syria and Libya. The court is somewhat deep, bordered on the rear by a raised portico with four columns. The square hypostyle hall with four columns is flanked by side rooms and communicates with the sanctuary, itself flanked by two lateral rooms. Two side antechambers lead to two subsidiary rooms. The bases of the columns in the hypostyle hall have been sliced off on the side of the central alley to allow for the circulation of the sled carrying the bark.

III. *The Northern Group*

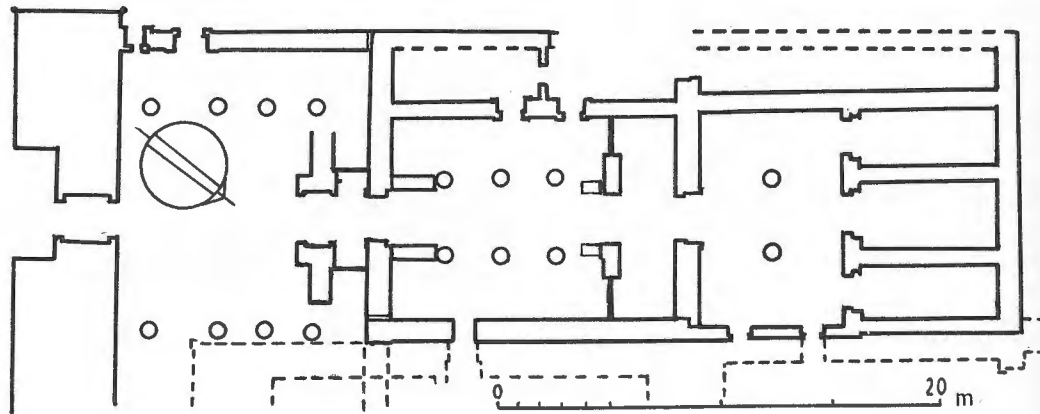
THE TEMPLE OF AMENHOTEP III (KARNAK NORTH).³¹⁶ This was originally enclosed by a girdle wall larger than the one remaining now. There are two periods in the construction of the temple of Amun-Re'-Montu in the reign of Amenhotep III. The plan is rectangular and symmetrical (N.-S.). In its first stage it was a square structure raised on a platform fronted with a columned portico (twelve bundle columns) and surrounded by an ambulatory. A pronaos preceded the shrine, itself flanked by two side rooms connected with smaller ones. A unique feature consists of a door sliding horizontally between the chamber west of the naos and an adjacent room. The actual opening is only 0.67 x 0.47 meters at floor level. A sandstone block kept in a recess can be slid out over a granite sill by means of a piston and a chain. The device recalls the elaborate ones used in the burial apartments of the Middle Kingdom to prevent violation. Here, however, the purpose of such an arrangement is not clear, although one could assume that it was to confine some small animal.

In the second phase of construction (fig. 142), a portico was added along the three sides of a court, preceding the original façade, and the shrine was transferred to a new room behind the original one flanked by two other rooms on either side. The dimensions are 52.50 x 26.25 meters (100 x 50 cubits), the socle being 1.15 meters high. A stairway formed the approach in front of the new structure, and a double ramp rising along the western side led to a lateral entrance to the portico.

At some distance west of the temple façade an artificial pond on a rectangular plan was excavated, bordered on its east and south sides by a



142. Plan of the temple of Amun-Re'-Montu at Karnak North and details of a sliding door.



143. Plan of the temple of Thot at El Kab.

stairway and on its west by a Nilometer. In the middle of the north and east sides a cubical stand was erected, similar to those at Dendera.

El Kab

This most ancient site, sacred to Nekhebet, the vulture goddess of the South, and dating back to the Archaic Period, was certainly rich in temples. A large squarish temple enclosure wall contains several buildings, some of which are within a second smaller enclosure wall. Two of these date back to the Eighteenth Dynasty: a smaller temple dedicated to Thot and built by Amenhotep II, abutting on a larger one dedicated to Nekhebet and built by Thutmose III, but enlarged in the Twenty-Sixth to Thirtieth dynasties.

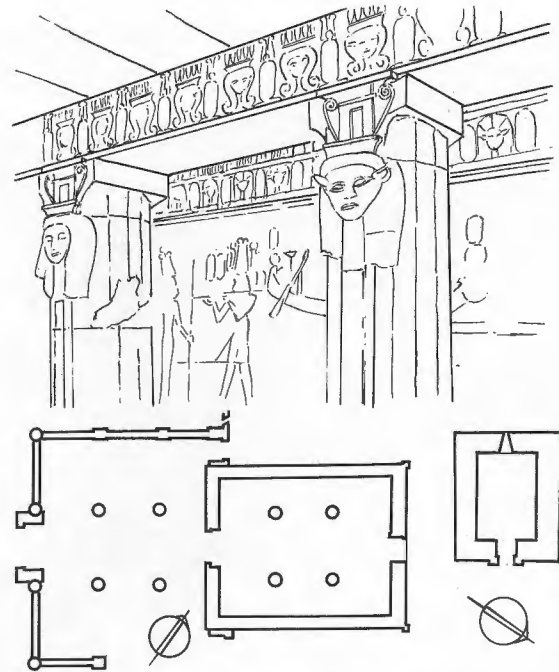
Both are on the typical plan of the New Kingdom cult temple: court with portico, hypostyle hall, pronaos, and three contiguous shrines.

TEMPLE OF THOT (AMENHOTEP II).⁸¹⁷ A pylon built by Ramses II forms the frontage of this temple. The court has two side-porticoes on four columns each (fig. 143). A hypostyle hall with two rows of columns precedes the pronaos or transverse hall with two columns which stretches in front of three contiguous shrines.

In the longer temple adjoining this one on the northeast which was built



Plate 34. Façade of the temple of Nekhebet at El Kab.



144. Plan of the temple of Nekhebet, details of its columns, and plan of the chapel of Thot at El Kab.

during the Twenty-Sixth Dynasty on earlier remains, the walls of the forecourt were originally in a line with those of the hypostyle hall of that of Thot. Later it was enlarged eastward so that it finally assumed an unsymmetrical plan.

THE DESERT TEMPLES: TEMPLE OF NEKHEBET (AMENHOTEP III).³¹⁸ This well-preserved small temple at El Kab was dedicated to Nekhebet, "the Mistress of the Entrance to the Valley," by Amenhotep III. It consists of one single room with two rows of two columns each supporting architraves parallel to the main axis (fig. 144). One door (S.) serves as entrance (pl. 34). The columns are unique in having a shaft with a cross section combining a sixteen-sided contour at the rear and an eight-sided one at the front, and crowned with a Hathoric face toward the central nave. This can be regarded as a simple architectural adaptation of the sacred musical instrument, the sistrum of the goddess Hathor (pl. 35).³¹⁹ The scenes on the walls have retained much of their



Plate 35. Hathoric column in the temple of Nekhebet at El Kab.

original color and represent Pharaoh making offerings to the gods or to a sacred bark. The ceiling is decorated with a row of vultures with outstretched wings, while the architraves and the top of the walls have a frieze of Hathor faces alternating with royal cartouches. A vestibule with papyriform columns was added in front of the temple in Ptolemaic times.

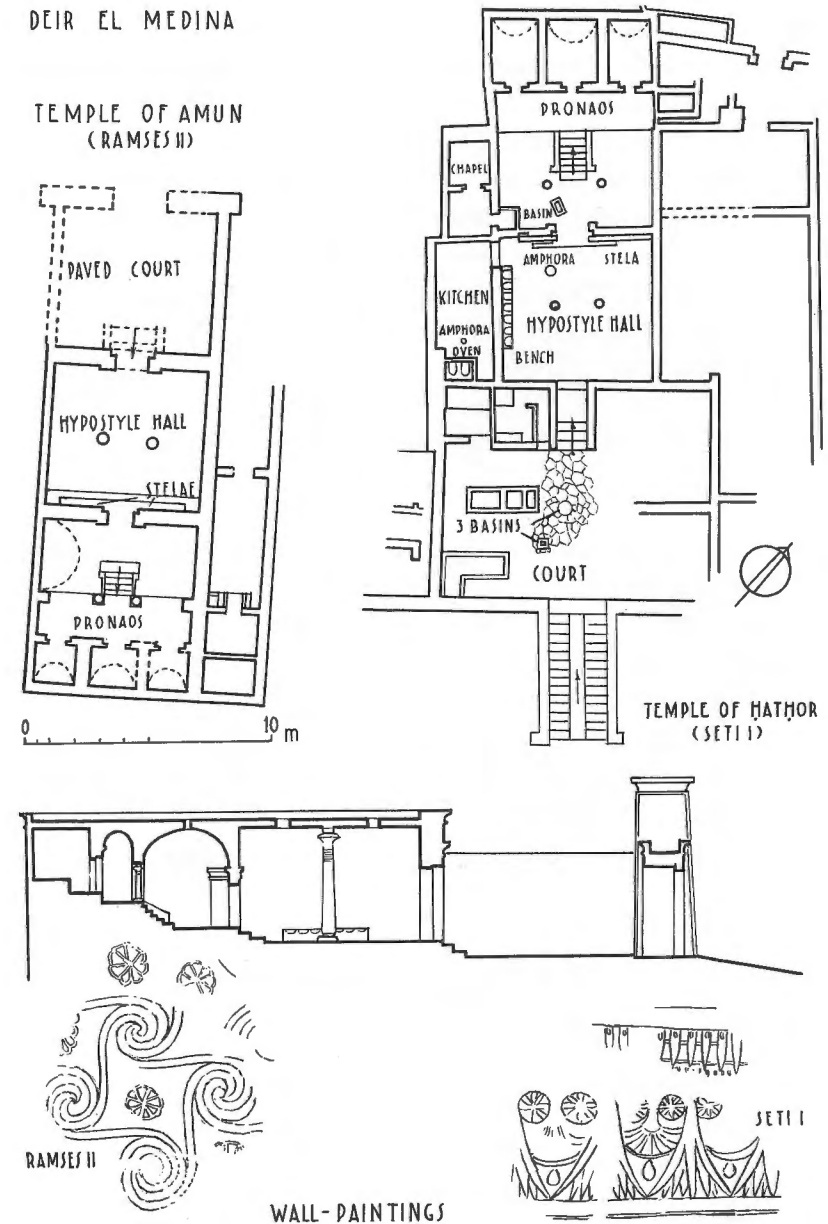
THE CHAPEL OF THOT.³²⁰ A small room was dedicated to Thot by Setau, the governor of Nubia under Ramses II, who also cut the large rock-temple at Garf Hussein (see p. 299). A doorway opens in the northeast façade while a prismatic window admits light from the rear wall. The scenes show Setau and Pharaoh adoring various gods.

Deir el Medina

TEMPLE OF HATHOR AT DEIR EL MEDINA (SETI I).³²¹ This relatively well-preserved temple stretches (S.E.-N.W.) to the east of the temple of Hathor (Ramses II) and can be regarded as a typical example of such sanctuaries at Deir el Medina. The plan is symmetrical (fig. 145). A long double stairway rises to a court with a central paved pathway, containing three ablution basins. A smaller stairway rises to a hypostyle hall with two columns, a brick bench with seven seats along the western side wall, and an amphora sunk in the floor. Adjoining this hall a long kitchen contains an oven and a sunk amphora. Two stelae are fixed in the rear wall above a step flanking the central doorway.

A second hypostyle hall follows the first one, of the same width, having two columns consisting of clay applied around a wooden central post. As is customary, a small chapel adjoins this hall to the south, dedicated by a certain Buqentuf to Amenhotep I, Nefertari, Amun, and Hathor. A rectangular limestone basin is sunk in the limestone pavement, askew to the longitudinal axis of the plan, and two limestone high monolithic altars found at the foot of the stairway rising to the platform of the pronaos had probably fallen down from the pronaos. Three contiguous vaulted naoi form the rear part of the temple. Paintings above a white plinth and surmounted by a kheker frieze decorated the second hypostyle hall and the annexed chapel, and probably also the other walls, now destroyed.

TEMPLE OF AMUN AT DEIR EL MEDINA (RAMSES II).³²² In front of the temple of



145. Plan and section of the temple of Amun, plan of the temple of Hathor, and details of wall paintings at Deir el Medina.

Hathor (Ramses II) and built outside the Ptolemaic enclosure wall is a temple on a rectangular plan, facing west. It consists of a square paved court and a square hypostyle hall with two columns. It is noteworthy that a round hole opening (2 cm. diam.) in a flagstone of the hypostyle hall was probably intended to fix a standard-pole. The whitewashed walls were probably lined with stelae and other ex votos. Two large stelae were found in the rear wall of the hall, above two steps and flanking the central doorway opening into the second hall. A stairway rises to the rear platform, which forms the pronaos to three contiguous naoi. The pronaos is paved with polished limestone and two limestone columns with corresponding antae-pillars supported a vaulted roof painted dark blue with vultures and cartouches of Ramses II. Paintings covered most of the walls of the rear hall, the pronaos, and the naoi (see fig. 145). Doorjambs are painted with a tall bouquet, or a date palm beneath which stand several figures.

TEMPLE OF HATHOR AT DEIR EL MEDINA (RAMSES II).³²³ The Eighteenth Dynasty chapel was razed and embedded under the platform in the court of the larger temple built by Ramses II, to which rose a double stairway with a central ramp. On the north side of the court was a pylon embodying a rock knoll which opened onto a second stairway leading to the temple area. To the east of this stairway was a court featuring a tree and a basin, bordered on the north by a portico on pillars. The latter arrangement reminds one of the terraced temple at Deir el Bahari.

The temple palace adjoins the court and the two stairways to the southwest.

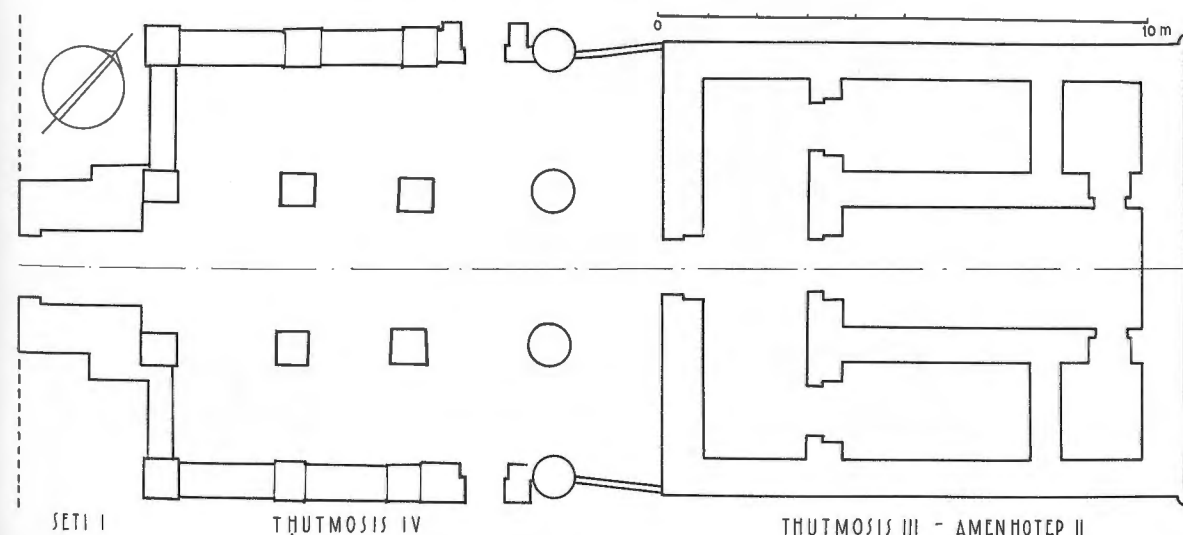
Cult Temples in Nubia and the Sudan

The interest in Nubia which Egypt had manifested since the Twelfth Dynasty and which had temporarily been stopped under the Hyksos kings was revived in the Eighteenth Dynasty. Egyptian pharaohs penetrated still farther south to Napata. Temples³²⁴ similar to those of Egypt itself were built by Egyptian pharaohs and dedicated to the Egyptian gods Amun, Re'Horakhty, Ptah, and Isis or to local deities like Dedun (at Semna), or to the deified Senusert III, patron of Nubia, and to the reigning Ramses II and his wife (Garf Hussein, El

Sebu'a, Abu Simbel). In the Middle Kingdom every fortress had its own temple, but in the New Kingdom temples were built adjoining towns or even cut in the rock of the western cliffs, far from the attacks of the Bedouins. Some of these monuments are on the remains of earlier structures from the Middle Kingdom (Kalabsha, Dakka). Egyptian temples are found even as far as Sesebi and 'Amara in the Sudan. Some of these temples were cut in the cliff and their colossal masses and statues bore testimony to the extensive power of Pharaoh.

'AMADA.³²⁵ this is a small temple built by Thutmose III (9.75 x 21.34; 10.67 m. high) and Amenhotep II, enlarged by Thutmose IV. The original project has been regarded by Maspero as an early example of the small town-temple, further copied in the small temples at Karnak (e.g., that of Ramses III); it is dedicated to Amun-Re' and Re'Horakhty. It consists of a court within a brick wall with proto-Doric columns forming a rear portico. Thutmose IV enlarged it transforming the court into a pillared hall through the erection of twelve pillars in three transverse rows in front of the four columns, with intercolumnar walls between the outer pillars. Seti I seems to have built a large pylon with a sandstone gateway abutting against the hypostyle hall (*iwnit*; fig. 146). The temple proper, built in sandstone, has a shallow transverse hall of appearance decorated with coronation scenes, a deep offering-table hall with a stela in its rear wall mentioning that it was "the place where the king stands," connected on either side to a small cult-stature shrine for Re'Horakhty (S.) and Amun-Re' (N.).

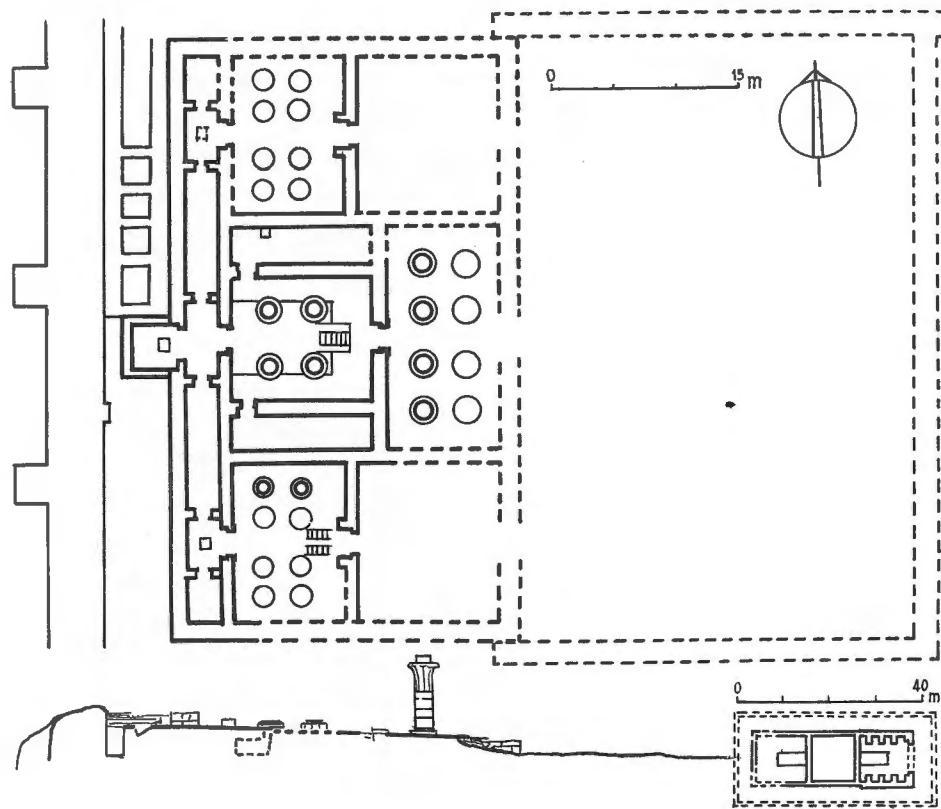
146. Plan of the temple at 'Amada.



SESEBI.³²⁶ In the fortified town of Sesebi in the Sudan, dating from the reign of Amenhotep IV, are four temples, three of which were built before his sixth year of reign when he abandoned Amun, and the fourth, a sun temple to the Aten.

The three contiguous temples have the same type of unusual plan and the same façade wall with three entrance doorways facing east. The central temple is the most important, and originally had a transverse hall with eight sturdy palmiform columns, a second hypostyle hall with four columns and two lateral rooms, a pronaos, and a sanctuary. Opening in the pavement of the north lateral chamber a crypt stretches E.-W. and has walls decorated with low reliefs representing Amenhotep IV, probably the builder of the three temples. Seti I altered the original sanctuary into a pronaos and built a sanctuary outside the western wall, abutting on the temple (fig. 147). A large court on a

147. Plan and section of three adjacent temples and plan of the Aten temple at Sesebi in the Sudan.

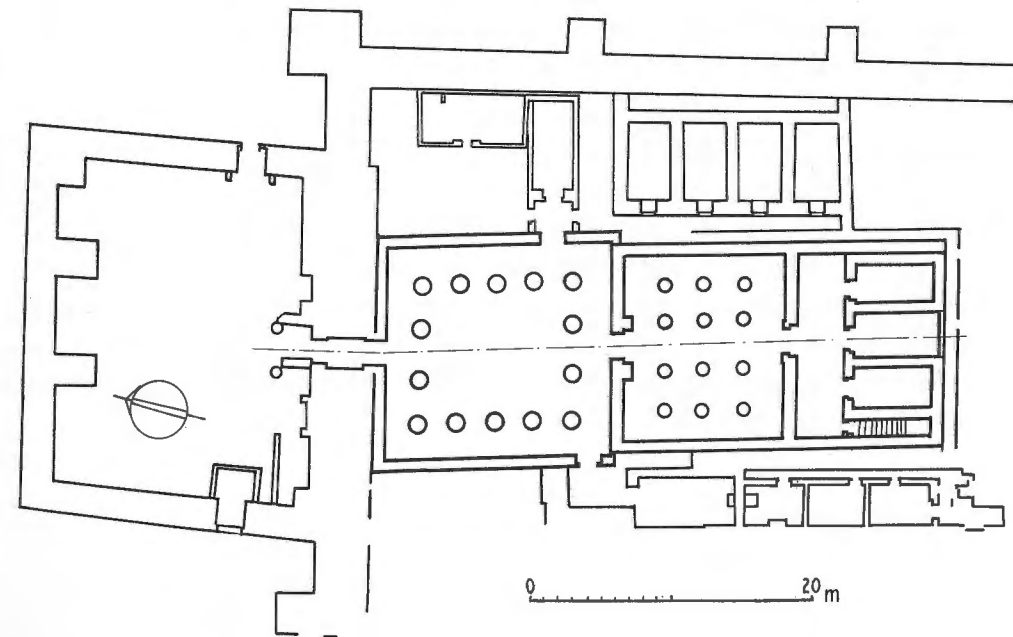


terrace precedes the common façade. Each of the two lateral temples has a court, a transverse hypostyle hall (eight columns), and a sanctuary with a socle for the sacred bark. It is to be noticed that a passage runs at the back of the three temples and connects their sanctuaries. The whole structure is raised on a platform consisting of retaining walls, foundation walls, and blocks under the columns, enclosing rubble. It has been surmised, on the grounds of certain finds, that the three temples were dedicated to the Theban Triad Amun, Mut (S.), and Khonsu, and that their walls had been covered with excellent low reliefs. Large granaries of the usual type extend to the south of the temples.

The fourth temple is an independent hypaethral structure to the north-east on a long rectangular plan within an enclosure. It might have had a small court (11.7 m. square), on a platform 2 meters high, to which a stairway ascends from the west. A symmetrical stairway with a colonnade was probably added by Seti I on the eastern side. The priest ascending to the court from the west would face the rising sun, as in the sun altars erected in the Re'Horakhty courts adjoining the mortuary temples at Thebes. The temple was built by Amenhotep IV for the cult of the Aten.

'AMARA WEST.³²⁷ In the northeast corner and abutting on the brick enclosure wall built by Seti I around the town at 'Amara is a temple (N.-S.), entered through a northern gateway preceded by a porch on two columns and a court (fig. 148). The temple built by Ramses II presents in its later stage an irregular

148. Plan of the temple of Ramses II at 'Amara West.

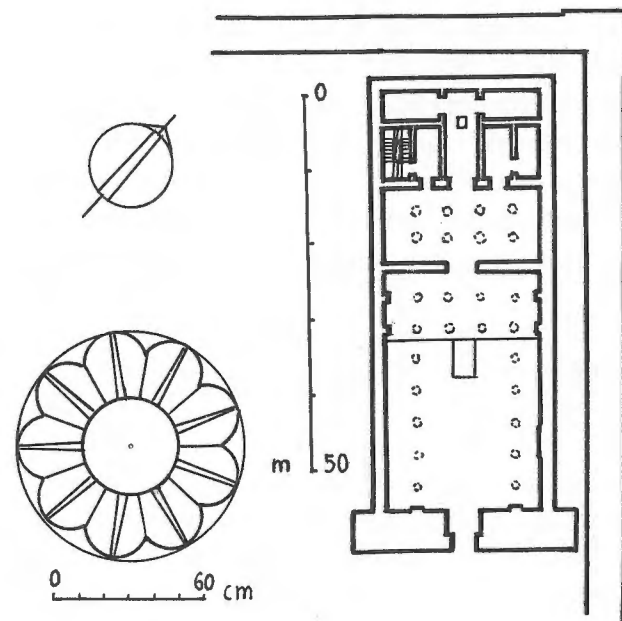


plan, symmetrical about a N.-S. longitudinal axis and consisting of a court bordered by a columned portico (14 columns), a hypostyle hall (12 columns), and a transverse vestibule or pronaos with three contiguous shrines and a rear staircase to the roof. Magazines roofed over with laminated vaults, accessible from the court, stretch to the east and the west of the temple. It seems that the original projects had been a hypostyle hall (the same as later) accessible from a court (instead of the later sanctuary) and a sanctuary to the north never carried out. Low reliefs on the walls of the hypostyle hall show religious or triumph scenes and inscriptions give the names of African and Asiatic towns and peoples.

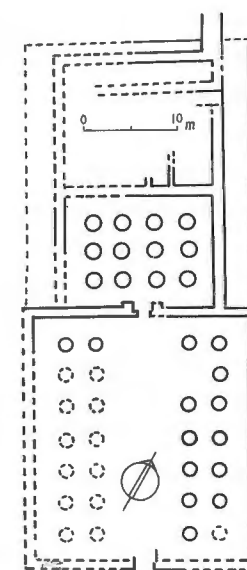
MI'M ('ANIBA).³²⁸ In the northeast corner of the New Kingdom fortified enclosure of the city there was a temple (E.-W.) laid out with two sides parallel to the walls and very close to them. The building is badly ruined and it seems that it dates from Thutmose I and Thutmose III, presumably enlarged under Amenhotep III. The symmetrical plan consists, as that at Soleb, of a pylon, a court bordered on two sides with a pillared portico and to the rear with a raised double portico. A transverse hypostyle hall leads into a deep shrine connected with two side rooms at the rear and flanked by two groups of chambers and staircase. Two types of capitals have been found—bundle papyrusiform and palmiform (similar to that of Amenhotep III at Soleb)—a fact that led to the surmise that there had been two rooms with different types of columns. (fig. 149).

FARAS.³²⁹ Four temples existed at Faras, only one of which can be studied. This was built by Tut'ankhamun on a symmetrical plan (N.-S.), consisting of a square court bordered on either side by a portico (2 rows of columns), a hypostyle hall (12 columns), and a sanctuary with dependencies (fig. 150).

BUHEN.³³⁰ Apart from the peripteral built by Hatshepsut and Thutmose III within the second fortified line, there was a second temple dedicated by Amenhotep II to Isis. It was built in brick, except for the stone pillars in the forecourt. The plan is rectangular, though a few of the walls are laid out askew. A square court has a transverse row of pillars and two other rows parallel to the main axis and connected by screen walls. This arrangement can be regarded as quite original, though it could be part of the first plan. Two transverse shallow rooms connect this court with the central shrine adjacent to two others (fig. 151).

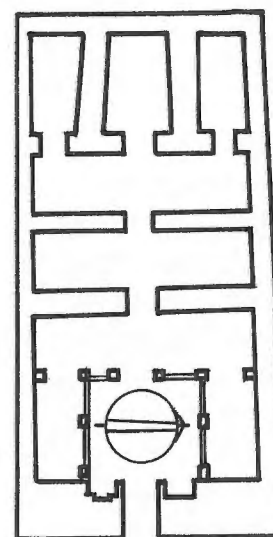


149. Restored plan of the temple in the fortified city of Mi'm and detail of a palmiform capital.

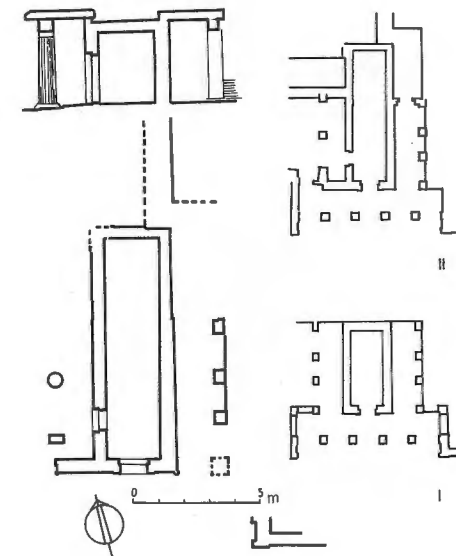


150. Plan of the temple of Tut'ankhamun at Faras.

151. Plan of the temple at Buhen.



152. Plan and section of the temple at Semna, and restored plans of the first, second, and third stages.



SEMNA. A brick temple of Thutmose I has completely disappeared while another dedicated by Thutmose III to the Nubian god Dedun and to the deified Senusert III has left but scanty remains. It was of sandstone, on the remains of an earlier structure from the Middle Kingdom, near the inner corner of the L-shaped fortress plan, embodied in a mass of brickwork which could have been a citadel (according to Borchardt; fig. 152). Syrian fortresses as represented on Egyptian monuments often had such massive citadels rising high above the stepped fortifications.

According to Borchardt,³³¹ Hatshepsut and Thutmose III built a deep sanctuary (N.-S.) preceded by a transverse pillared portico and flanked by two others, the one to the east abutting on massive brickwork (fig. 152:1). Thutmose III deepened the shrine, perhaps for the bark of Dedun, blocked the south end of the western portico, and replaced its pillars by a fluted column and two antae, while the eastern one was connected to a rear corridor (fig. 152:II). A statue representing Senusert III seated as an Osiris was erected at the rear of the sanctuary. The temple was decorated externally and internally.

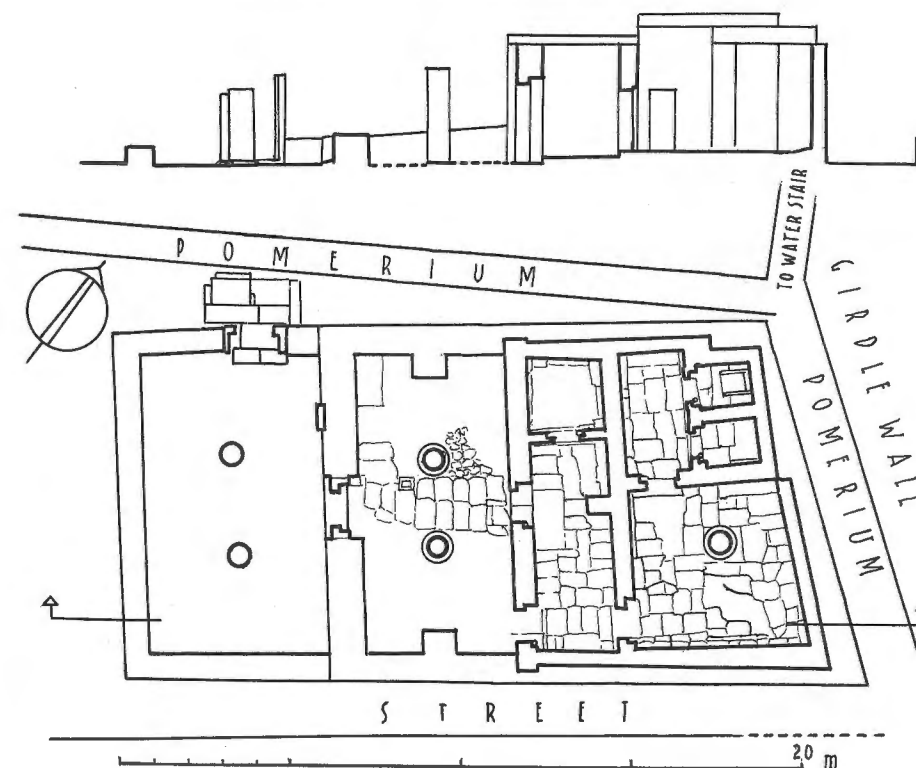
KUMMA.³³² In the north corner of the fortress are the remains of a temple (E.-W.), separated from the enclosure walls by the usual land running along the inner side. On the grounds that both rooms in this corner are low and roofed over with heavy stone slabs, Borchardt surmises that they could have supported a tower (cf. the citadel at Semna). The fort was not garrisoned in the New Kingdom, but it was occupied by a civil community and by the priests of the temple "Khnum-'Opponent-of-the-Bows'" (*Khnum Itenw Pedjw*), dedicated to Khnum and Senusert III.

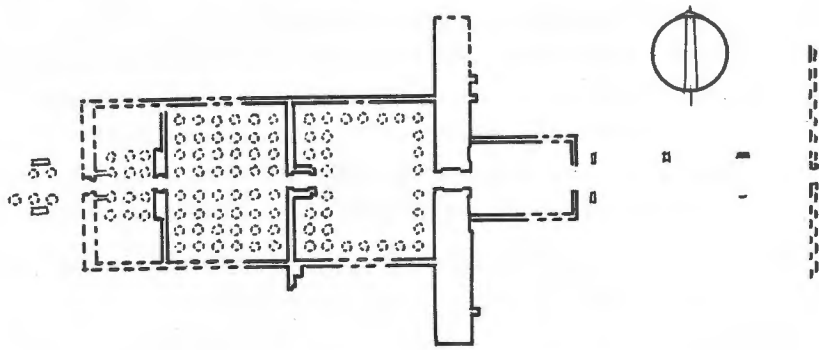
The plan of the temple built by Hatshepsut and Thutmose III, enlarged by the viceroys of Amenhotep II, is not strictly symmetrical (20 x 10 m.). A court (8.5 x 5 m.) is entered through a lateral doorway (N.) and is connected to a hypostyle hall (8.5 x 4.4 m.). This part built in brick precedes an irregular hall in sandstone with a rear portico on one column, connected to an antechamber bordered on one side (E.) by two contiguous shrines (1.5 x 1.2 m. each). The columns of the hypostyle are polygonal and in sandstone. The pavement is in sandstone but there is an axial alley in pink granite. On the walls Thutmose III appears seated between Khnum and Senusert III, while most of the other scenes feature Dedun. A statuette of Amenhotep II was found in a walled-up niche of the antechamber, or "offering-table hall," which

is decorated with offering scenes. The two shrines decorated with identical scenes would have served for the cult statues of two forms of Khnum. The wall scenes are derived from the repertory of the daily ritual performed by the priest: purification, libation, undressing, and embracing the statue. The irregular layout of this part of the plan is attributable to the fact that its rear wall runs parallel to the enclosure wall of the fortress. The plan is unique (fig. 153).

SOLEB.³³³ This temple, one of the largest (121.9 m.) outside Egypt, was built by Amenhotep III for Amun on the west bank, north of the Third Cataract. It is on the typical New Kingdom plan (E.-W.). A quay connected by an avenue of crio-sphinxes to an entrance-hall with three or four pairs of columns formed the approach to the temple. A wide pylon formed the actual façade (fig. 154).

153. Plan and section of the temple at Kumma.

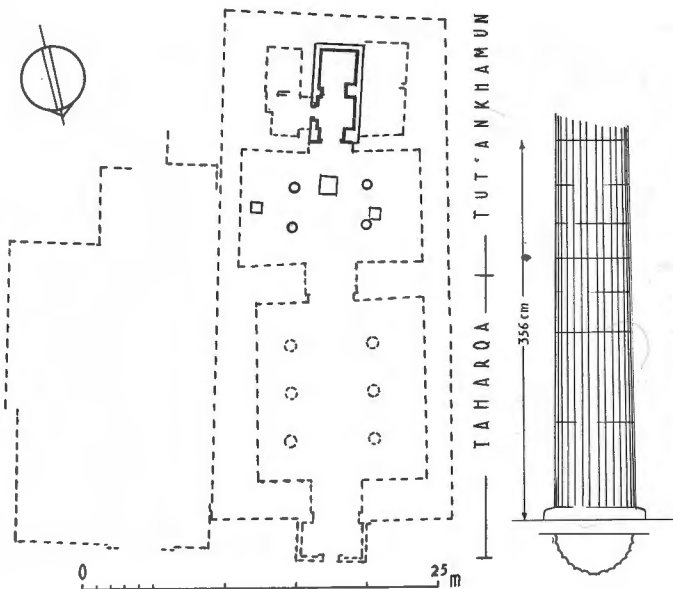




154. Plan of the temple of Amenhotep III at Soleb.

A square court bordered by a portico on columns along its four sides precedes a square hypostyle hall (48 columns) connected to a second rectangular hypostyle hall. The rear part of the temple could not be retrieved. The architect Amenhotep son of Hapu is represented, taking part in the ceremonies of the first jubilee festival, and was probably the designer of the temple.

155. Plan of the temple of Amun-Re' at Kawa, and detail of a fluted column.

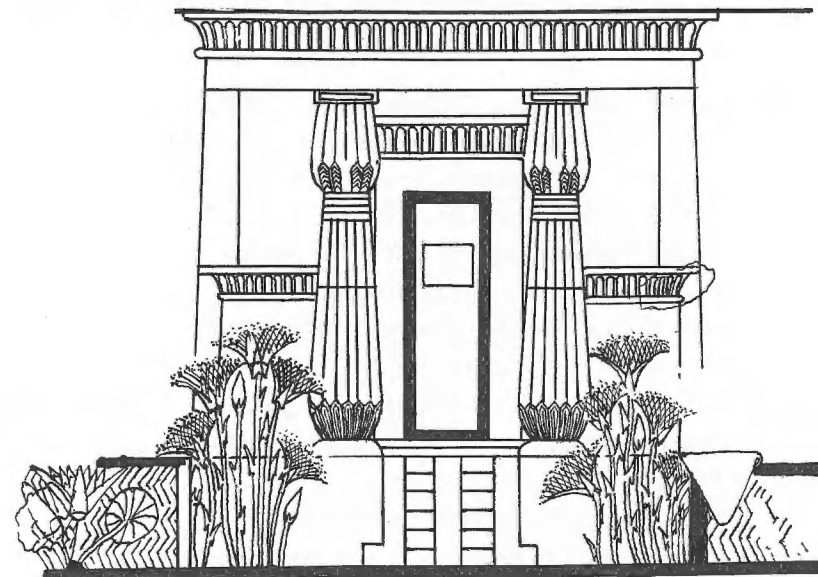


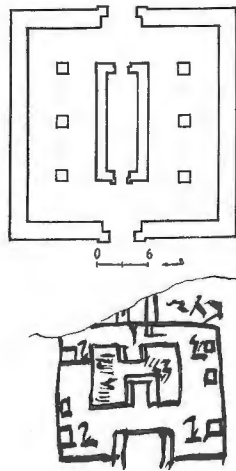
KAWA.³⁸⁴ It seems that Amenhotep III built a temple at Kawa, probably reconstructed by Tut'ankhamun. Although the Egyptian name "Gem-Aten" (Finding-the-Aten or Meeting-the-Aten) of Kawa would suggest some worship of the Aten, there is no evidence of such.

The sandstone remains of Tut'ankhamun's temple, dedicated to Amun-Re', consist of the sanctuary and its pronaos and four columns in the second court. Both rooms were roofed over with a ceiling of deep sandstone slabs, and light could only penetrate the sanctuary through a small aperture (24 cm.). The columns are fluted, with 27-32 arrises, and have a flat band facing the central alley, a type in favor in Nubia during the New Kingdom. The flutes have been colored red (two flutes) alternating with black (one flute) (fig. 155).

The low-relief scenes in the pronaos show the bringing of a bull with deformed hoofs and horns in the form of human arms beneath a Negro head, and Tut'ankhamun before Amun-Re' or offering incense to Re'Horakhty and Atum. In the sanctuary the main scene is that of Min being presented with four calves by Tut'ankhamun.

156. Painting from the tomb of Ipyu representing a peripteral chapel.





157. Sketch on an ostracon representing a peripteral temple, and interpretation.

With Taharqa the site of Kawa knew a new favor and this pharaoh built a brick temple embodying the earlier remains of the sandstone temple of Tut'ankhamun.

THE PERIPTERAL TEMPLES

REPRESENTATIONAL EVIDENCE

Two contemporaneous representations of a peripteral temple are available. In the tomb of Ipuu (fig. 156),³³⁵ a sculptor of the reign of Ramses II at Deir el Medina, a scene represents a watercourse on whose bank a small peripteral chapel is erected. The entrance façade is shown: a stairway with a central ramp and side walls ascends to a socle on which two bud papyriform columns and two corner pillars, connected by low parapet-walls, carry an architrave. Between both columns a doorway with a square plate at the top closes the entrance to the shrine proper, behind the front of the chapel. According to the setting of the chapel featuring a garden it is assumed that it served as a landing rest house for the sacred barks, perhaps during their long journeys in the jubilee festivals (pl. 36).

A second drawing is a mere working sketch from the end of the Eighteenth Dynasty, on an ostracon (fig. 157). The plan, traced hurriedly, is square (27 cubits, according to the accompanying text), with three pillars on each of the long sides, a doorway in the front and rear façades, and a smaller shrine in

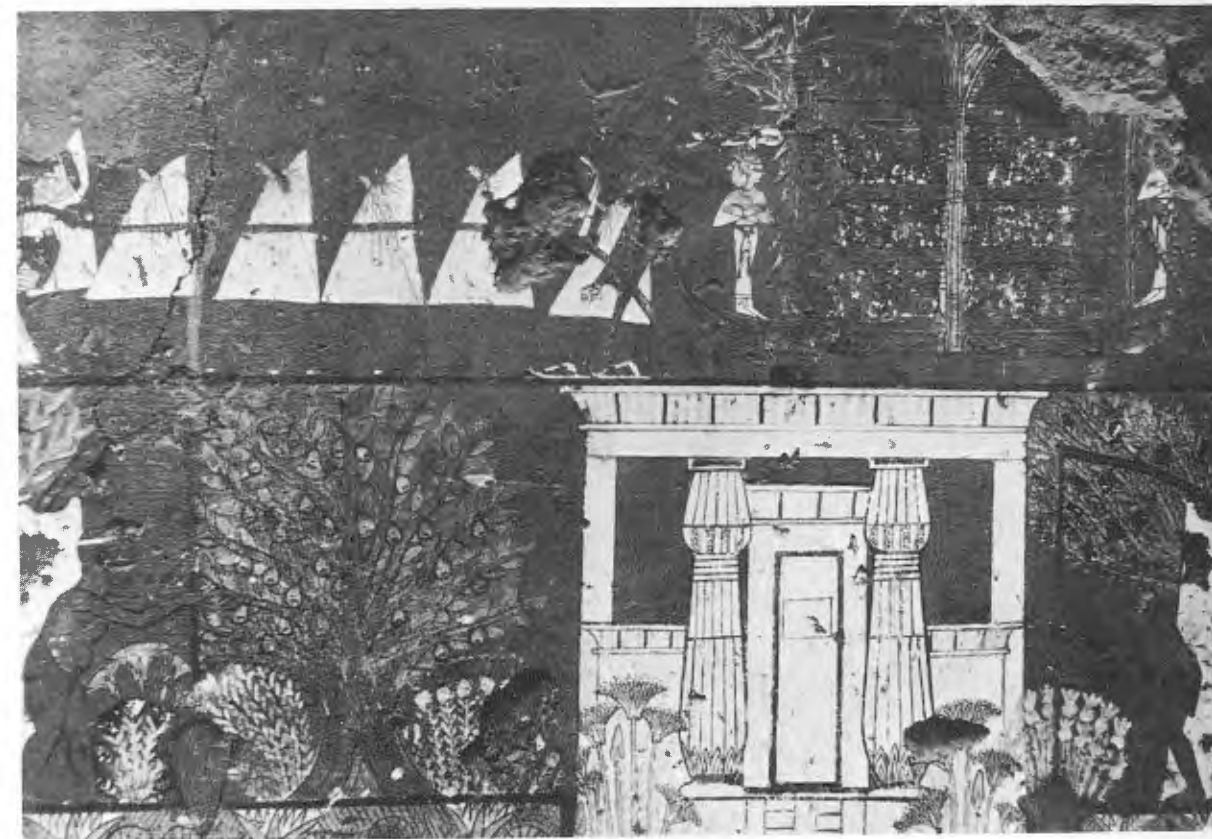


Plate 36. Mural representing a peripteral chapel, from the tomb of Ipuu (No. 217, Thebes, Nineteenth Dynasty).

the middle with similar doorways (6 x 14 cubits).

Both drawings show the characteristics that will be found in the actual remains of peripteral temples.

THE TYPES

Two types of peripteral temples can be differentiated:

I. A chapel with numerous rooms, preceded by a portico open on three sides with rows of columns and pillars (Temple of 'Amada) which occasionally extends laterally with columns (Temple at Wadi Halfa West). This type of chapel seems to be dedicated to the cult of a deity.

II. A shrine on a platform, open at the front and the rear and surrounded on four sides by an ambulatory bordered with pillars and an intercolumniation parapet to which one stairway ascends at the front (El Kab, 'Amada, Medinet Habu), and often a second one at the rear (Karnak, Elephantine, Kuban).

It has been assumed that this type of shrine would have served for the jubilee festivals of the pharaoh.³³⁶ It is clear, however, that the shrine was designed as a way station or repository for a sacred bark that could be carried or slid easily up and down through the front and, occasionally, the rear stairway.

Most of the chapels date from the Eighteenth Dynasty. Similar structures with a pair of columns flanking the entrance doorway are often represented in the tombs at 'Amarna, and the remains of hypaethral kiosks, with open columnar treatment on the front façade only, have been found in the axis of the entrance alley in villas at 'Amarna. They were used as private chapels to the Aten and each contained an altar and a stela.

The peripteral chapel is not an invention from the New Kingdom. The beautiful structure of Senusert I at Karnak shows that it was already known and carried out to perfection at the beginning of the Middle Kingdom, and perhaps even earlier (Heb-sed pavilion of Neterikhet Djoser at Saqqara).

For lay purposes, peripteral kiosks with wooden columns or poles were erected as shelters against the heat of the sun in estates (granaries, landing quays) or as a ritual shelter (funerals). Such structures were later erected in stone according to a standard type for religious use.

In the Ptolemaic Period a similar type of peripteral temple (called *mam-misi* by Champollion) will be built in front of the main cult-temple to serve for the ritual ceremonies connected with the begetting of the deity.

TYPICAL EXAMPLES OF PERIPTERAL TEMPLES

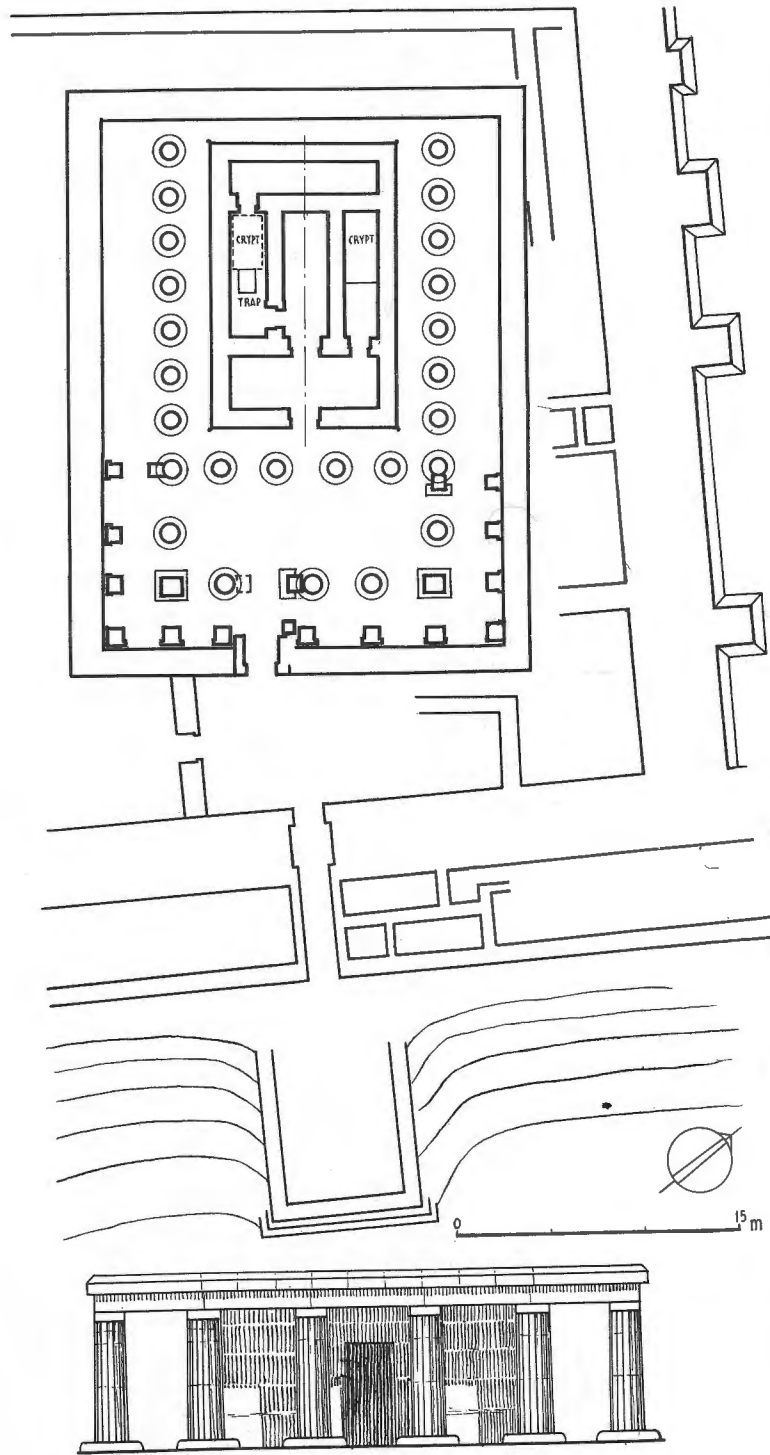
Type I

Only three examples of the temple preceded by a peristyle with columns and pillars have yet been recognized.

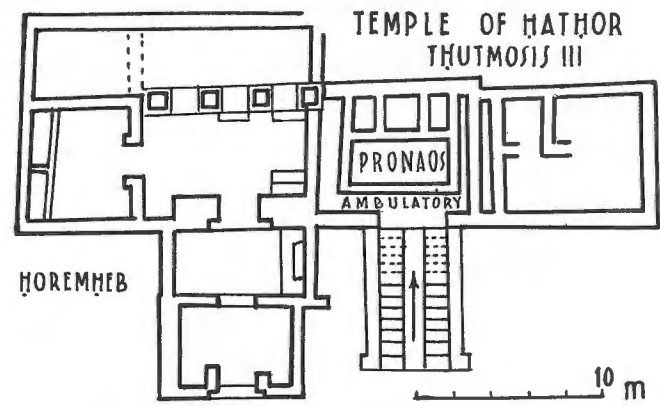
WADI HALFA WEST.³³⁷ This structure stands in the northeast corner of the Middle Kingdom fortified enclosure wall at Buhen, perhaps on the site of an earlier temple from the Twelfth Dynasty. The various stages through which it passed under Thutmose I, Thutmose II, Hatshepsut, and Thutmose III have been restored. The nucleus consisted probably of the chapel itself: a transverse vestibule connected to a deep sanctuary set axially and a lateral independent room. From the sanctuary a side doorway opens into a lateral room connected with a second transverse one at the back. Under Hatshepsut a row of columns surrounded the chapel and the walls were decorated (fig. 158). Thutmose III enclosed the structure within walls, erected a transverse festival hall with columns, pillars, and pilasters in front of the temple, and lined the walls with new decorated slabs. The temple plan is unique. Later some minor changes were introduced (addition of two portal jambs to two columns; shifting the entrance to the portico). A gateway in the fortified wall and a quay platform on the Nile bank correspond with the temple entrance.

CHAPEL OF HATHOR AT DEIR EL MEDINA (fig. 159).³³⁸ The remains from the Eighteenth Dynasty under the Ramesside temple are those of a small sanctuary with a transverse pronaos and three contiguous naoi. An ambulatory surrounds the group on three (?) of its sides and it could be surmised that this had been bounded by a parapet wall with pillars. The temple would then have been of the peripteral type, already known in the Middle Kingdom.

'AMADA.³³⁹ The temple was never completed. It dates from Thutmose III and Amenhotep II and is of carved stone. The original structure was on a rectangular symmetrical plan: a transverse vestibule with three doorways in the rear wall, opening onto three contiguous rooms. The central one was the main sanctuary and was larger, connected with two small lateral rooms. Walls were beautifully carved and painted. A peristyle of four columns preceded the entrance façade. Amenhotep II connected the end columns and the torus of the façade by means of two sculptured slabs (fig. 160). A pillared hall was

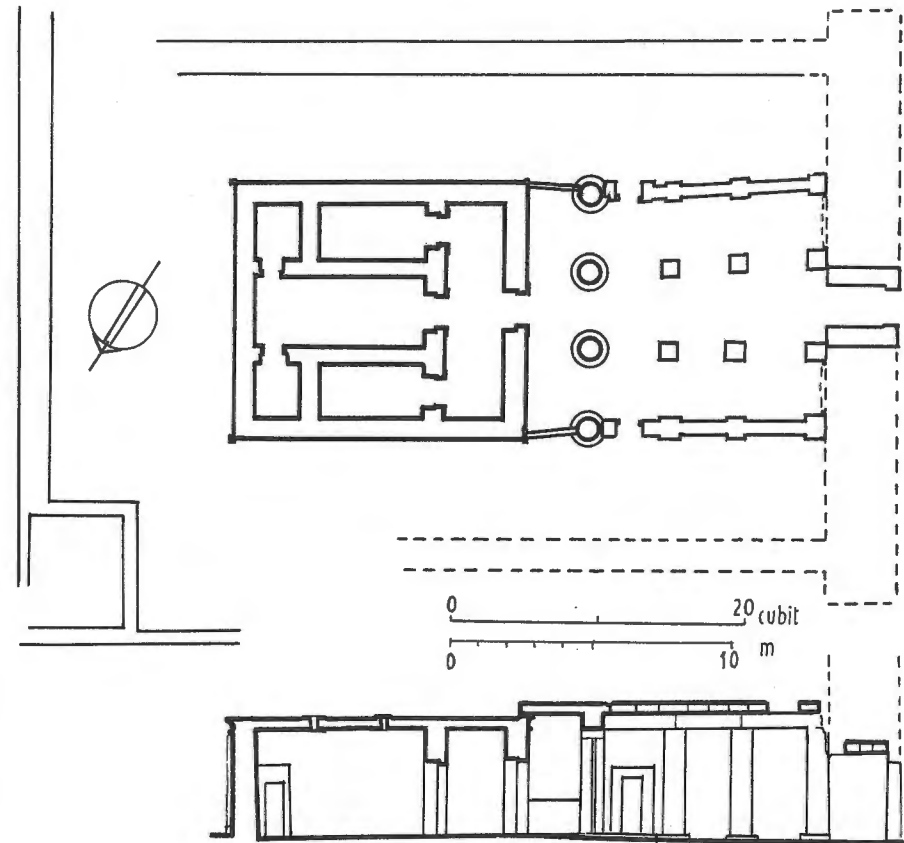


158. Temple at Wadi Halfa West: plan and restored façade of chapel.



159. Plan of the temple of Hathor at Deir el Medina.

160. Plan and section of a temple with peristyle at 'Amada.



erected by Thutmose IV for his second jubilee. The pillars have corresponding antae in the lateral walls, showing on the exterior as pilasters, an unusual feature in Egyptian architecture.

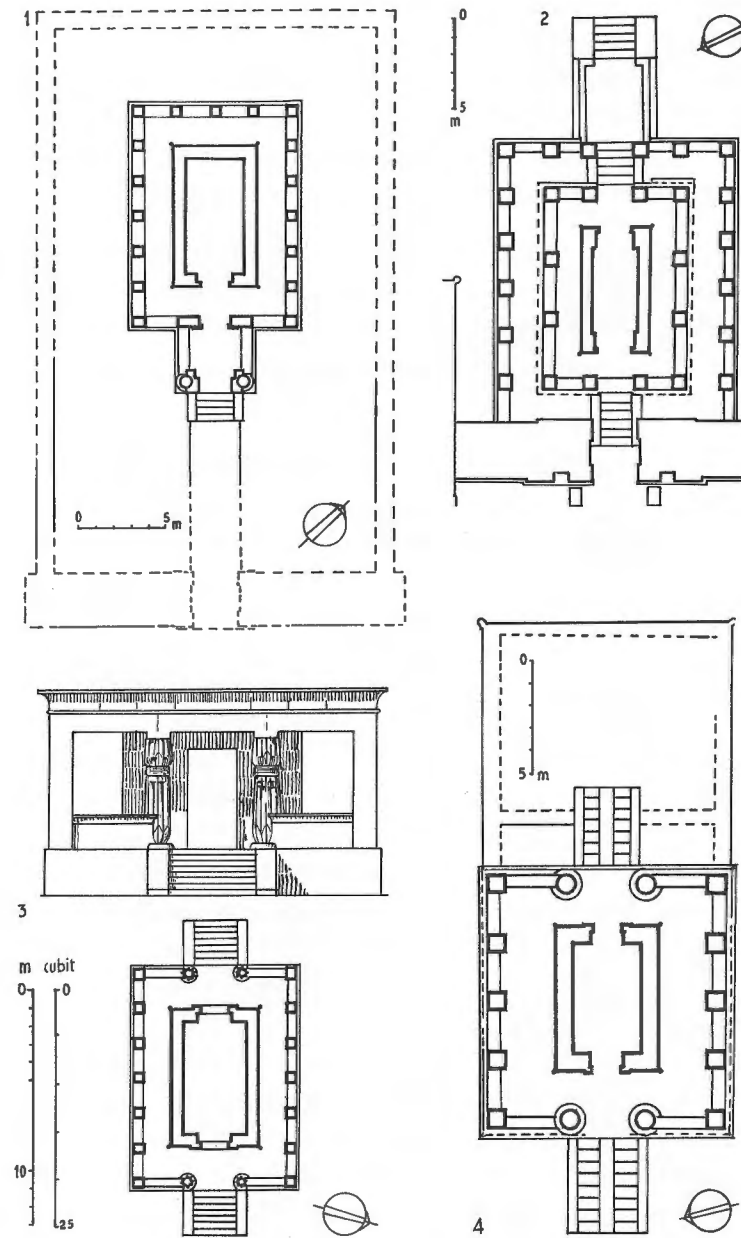
Type II

CHAPEL IN FRONT OF THE SACRED LAKE (KARNAK).³⁴⁰ This small peripteral chapel abuts on the external face of the wall surrounding the court between Pylon VII and Pylon VIII at Karnak, with its longitudinal axis (E.-W.) corresponding to that of the Sacred Lake, obviously pointing to some symbolic or ritual connotation. Two stages in the construction can be detected, corresponding perhaps to the first (Year 30) and second (Year 34) jubilees of Thutmose III (fig. 161:2).

The original project consists of a sandstone platform on which stands an alabaster shrine open at both ends and surrounded by an ambulatory bordered with pillars and a parapet rounded at the top. Two stairways ascend at both end façades to the middle bay, which has a larger span. The repository once roofed consists of two monolithic walls of alabaster carved with few relief scenes. A later structure covered this one. It has a larger ambulatory with a second row of pillars. It is noteworthy that the end intercolumniation in the new façade is nearly as large as the middle one, owing to its pillars having been set in a line with those of the earlier façade behind, which probably was still extant. It was transformed into a repository for the sacred bark. Processions had access from the east to the central stairway facing the lake. From this kiosk or tribune the god could follow the festival performed on the lake.

CHAPEL AT EL KAB NORTH.³⁴¹ This chapel, dedicated by Thutmose III to the vulture goddess Nekhebet, has the peculiarity of a shrine closed at the rear end and a pillar on the axis in the rear row. The front corner pillars are rectangular (66.5 x 79 cm.), all the others being square in plan. In the middle a doorway abuts on the pillars and a porch projects in front of it, probably on two bud papyriform columns. The stairway leading to the platform is set in front of the porch (fig. 161:1). The whole temple was fronted by a pylon and surrounded by a rectangular enclosure wall.

CHAPEL AT ELEPHANTINE.³⁴² Amenhotep III built a chapel for his first jubilee,



161. Restored plans and elevation of peripteral chapels: 1, El Kab (Thutmose III); 2, Sacred Lake at Karnak (Thutmose III); 3, Elephantine South; 4, Kuban (Amenhotep III).

dedicated to Khnum, the god of the Cataracts at Elephantine. It has been completely destroyed in modern times and is only known from the records of the French Expedition. It was of the usual type with two stairways, two bundle papyriform columns instead of pillars on the front and the back entrances, and a parapet wall crowned with a cavetto cornice on the front façade, instead of having a rounded coping (fig. 161:3).

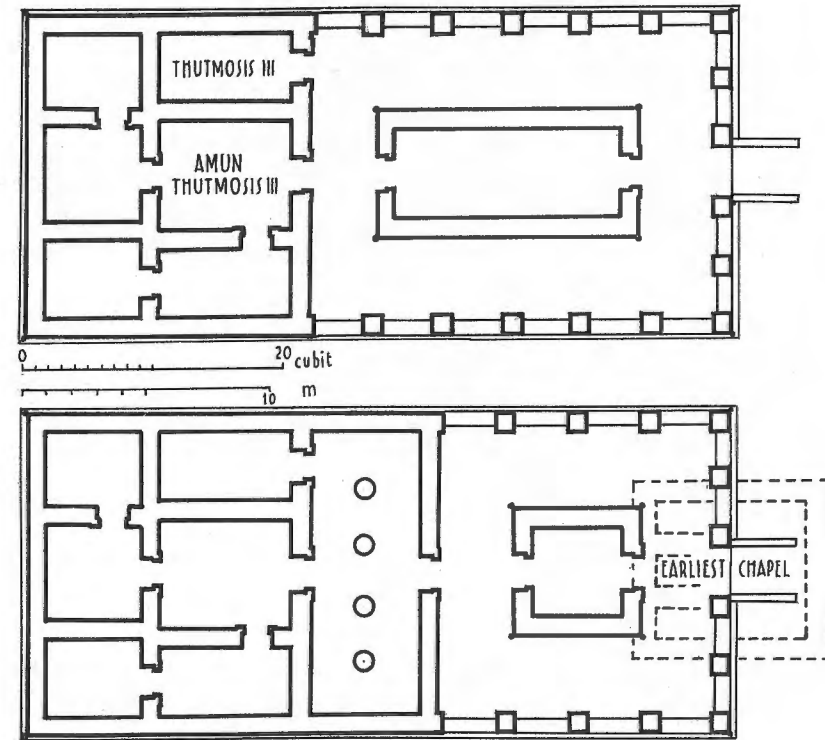
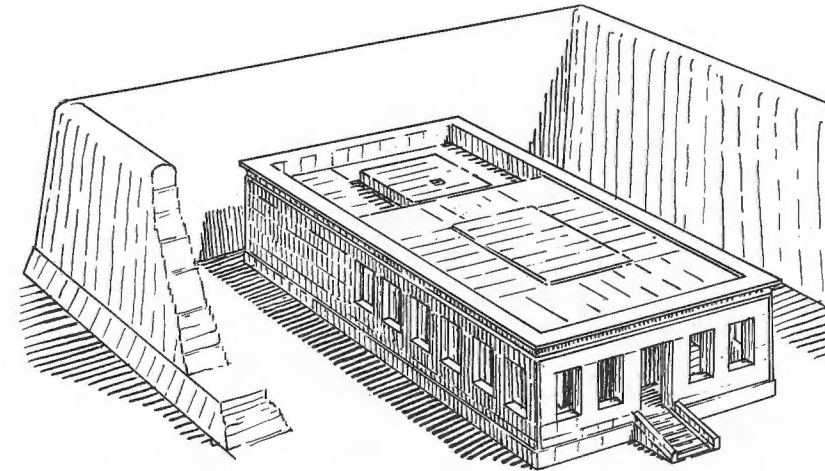
THE NORTH CHAPEL AT ELEPHANTINE.³⁴³ This was dedicated by Ramses II and was similar to the earlier one to the south of the island. It had two stairways, seven pillars on either long side, and two columns at the front and back entrances. According to the mural representations, it contained the sacred bark of Khnum.

CHAPEL AT KUBAN.³⁴⁴ Amenhotep III dedicated this chapel to the gods of the nearby temple, probably Amun and others. The structure is of the same type as that of Elephantine: two stairways flanked by two pairs of bundle papyriform columns, five pillars on the long sides, and a cornice crowning the socle (fig. 161:4).

THE SMALL TEMPLE AT MEDINET HABU.³⁴⁵ Medinet Habu was one of the four centers of the cult of Amun in Thebes. Here the god assumed the shape of the "Ancestor of the Eight Primeval Gods," and the place was called Iat-Tjamet, later deformed into Djamet (Coptic, *Djimē*), perhaps the prototype of the Greek "Thebes."

Hatshepsut had built a structure at the back of an earlier shrine, but she later removed it to build the small peripteral temple. Thutmose III completed the construction with alterations. The project of Hatshepsut consisted of a rectangular building with a peripteros enclosing the small shrine, and, at the rear, a transverse hall with four columns connected to a group of six rooms. The latter were left by Thutmose III but the transverse hall was cancelled to allow for a longer peripteros enclosing a longer shrine (fig. 162).

The rear part contains a central room, larger and higher than the others flanked by two narrow rooms and a row of three small ones at the back. From a slit window in the middle of the roof of the large room, or "offering-table hall," fell the only rays of light allowed in this building, to illuminate the highly polished black granite statue of Amun and Thutmose III, seated side by side on a throne (pl. 37). The low reliefs on the walls represent Amun



162. Small temple at Medinet Habu: restored perspective, plan as completed by Thutmose III, and project of Hatshepsut.

worshiped by Pharaoh while those in the north sacristy (*per dwat*) opening on the façade show the royal couple worshiped by Iwnmwtef. The two rearmost rooms were shrines for the standing statue of "Amun, Lord of the Two Lands" to the north and the ithyphallic Amun-Ipet to the south, each preceded by its small offering room.

The shrine for the bark was built as an independent structure to the fore, crowned with torus and cornice and a doorway in the front and rear façades. An ambulatory 3 meters wide surrounds the shrine and is bordered on three sides by a row of pillars connected by a low parapet wall (see pl. 38). The inner sides of the pillars are in low relief while the outer ones are in sunk relief. The façades of the temple are simple, undecorated, except for the eastern one. It was in this repository that the bark of Amun of Luxor came to rest every 10 days.

As in other temples of Amun, the 'Amarna revolution left its traces: the statues were broken and buried, and the walls were defaced, but were subsequently restored in the Nineteenth Dynasty. Ramses III included the temple within his fortified girdle wall.

Some peculiarities of the construction should be mentioned: the roof of the peripteros is of thick slabs (52 x 300 cm. long) jointed directly or with a stone filler set in gypsum in a channel at the top of the joint. The corner slabs are in two units, each resting on three corners only. An additional column had to be erected under the fourth corner by Pharaoh Akhoris (390 B.C.).

Various additions were subsequently made in front of the original structure (Twenty-Fifth Dynasty, Persian Period, Nektanebo I, Ptolemaic Period).

ROCK-CUT TEMPLES

Although the rock-cut tomb is known since the end of the Old Kingdom, the rock-cut temple does not appear until the Eighteenth Dynasty, in the so-called Speos Artemidos hewn by Hatshepsut and Thutmose III in the cliffs at Beni Hassan. It is significant that the mortuary temple of the same Queen Hatshepsut was also partly hewn out of the cliff at Deir el Bahari. This fact might even signify that her famous architect Senmut or perhaps Hapuseneb was the initiator of such a type of mortuary or cult temple. On the other hand, it has been propounded that the rock-cut temple could have been created in conjunction



Plate 37. The south aisle of the peripteros in the small temple of the Eighteenth Dynasty at Medinet Habu.

with the nature of the sites located in the cliffs of the mountainous ranges bordering the Nile. This theory is illustrated by the rock temple of Horemheb (Nineteenth Dynasty) at Gebel Silsila and the numerous temples cut by Ramses II and his courtier Setau in the western cliffs in Lower Nubia, where the valley narrows practically down to the Nile itself. In some places the cliff approaches so close to the waterbank that the usual pylons and forecourts have been omitted from the layout of the temples (Garf Hussein, Abu Simbel).

Notwithstanding their purpose as cult temples, these monuments show a marked similarity to the contemporaneous rock-cut private tombs at Thebes. The simplest plan (Hatshepsut, Horemheb at Elesiya, Gebel Dosha) is cruciform and recalls the typical plan of the Theban tomb (Rekhmire', Ineny, Puyemre'). The rock temples in Nubia usually have a more elaborate plan and can also be compared to more elaborate rock-cut tombs at Thebes with a forecourt, a court and portico, a broad transverse hall, a deep hall and a sanctuary, often flanked by lateral rooms (tombs of Sennufer, Ipy, Tjoy). This similarity is probably due to the fact that both rock-cut tomb and rock-cut temple embody elements of the cult temple, itself an outgrowth of the domestic architectural program.

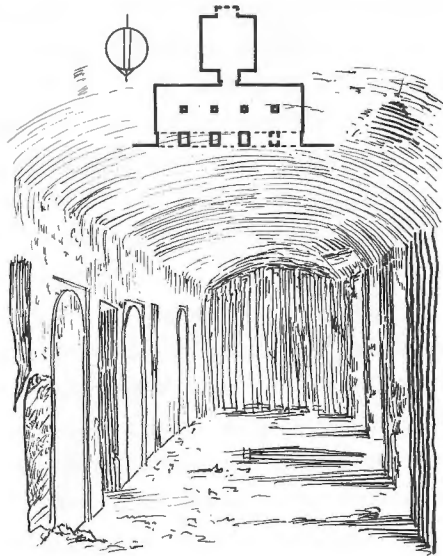
In the Ramesside rock temple the approach usually features a pylon preceding a forecourt with alleys of sphinxes, walled in by an enclosure wall and followed by a second pylon and a court with a pillared portico. Both forecourt and court can be reduplicated (Wadi el Sebu'a), or the court can be partly cut in the rock (Garf Hussein). The pillared hall set transversely as an open portico (Speos Artemidos, Horemheb at Gebel Silsila), or on a square plan (Ramesside temples in Nubia), represents the hypostyle "hall of appearance" of the typical cult temple. In the simplest rock temples the sanctuary is set in the axis, beyond this hall. In the more elaborate projects a transverse "hall of offering," sometimes pillared, follows and is connected to one (Beit el Wali) or three shrines (Wadi el Sebu'a, Abu Simbel, Garf Hussein, Derr) opening in the rear wall, and eventually with lateral deep chambers (Garf Hussein, Wadi el Sebu'a, Abu Simbel). Although this last part of the rock temple agrees exactly with the similar one at the rear of the built cult temple it is often, especially in the temples of Ramses II, a bark-chapel coupled with a cult-statue shrine. The rock temple with its pylon often cut in the cliff faces the "local East." In the rock temples of Ramses II in Nubia the subject of the wall scenes of a room corresponds to its function in the main rooms only (bark-chapel, offering and feast halls).

One can but wonder at the momentous achievement in these Ramesside temples, cut in the rock in spite of the difficult working conditions, including lack of light and ventilation. They are the same conditions experienced by the workmen and artists in the rock tombs, but here they are on a larger scale and are in faraway Nubia. Moreover, statuary was incorporated in the shape of colossal standing figures of King Ramses II abutting on the pillars in the forecourt, court, or hypostyle hall, or seated colossi flanking the doorway on the façade. Similar colossi were also erected in the extensive temples of the same pharaoh at Thebes. This style of royal statuary in the temple is not met with for the first time in the New Kingdom, but can be retraced to the mortuary temples in the Old Kingdom.³⁴⁶ Nowhere, however, are they used on such a large scale, whether in dimension or number, or are they embodied so intimately in the architecture as in the monumental temples of Ramses II. In the rock temples of Lower Nubia architectural statuary forms an integral part of the design and structure, being cut, as were the walls and pillars, out of the bedrock itself.

TYPICAL EXAMPLES OF ROCK-CUT TEMPLES

THE SPEOS ARTEMIDOS (BENI HASSAN).³⁴⁷ This is the earliest rock-cut temple yet known, called Speos Artemidos by the Greeks, who thought it was a "Grotto of Artemis." It was dedicated by Hatshepsut and Thutmose III to the lion-goddess Pakhet, Lady of the Desert, and to Thoth. The plan is cruciform, similar in general to the typical plan of the rock-cut tombs in the New Kingdom. A transverse portico with front piers corresponding to four smaller pillars at the rear, with a roof cut into a flat vault, is connected by a short corridor to the axial sanctuary (fig. 163). In the rear wall a niche is intended for a statue of the goddess. The walls and pillars are decorated with religious scenes of Pharaoh and various deities. Seti I inserted his names and representations in various parts of the scenes.

THE ROCK TEMPLE OF HOREMHEB (GEBEL SILSILA).³⁴⁸ The district of the quarries at Silsila seems to have been regarded as sacred from the earliest times. The quarries were heavily exploited in the New Kingdom: the cliffs facing the river bear numerous memorial inscriptions and scenes of pharaohs and individuals represented in the presence of the gods, mainly Amun. Some-



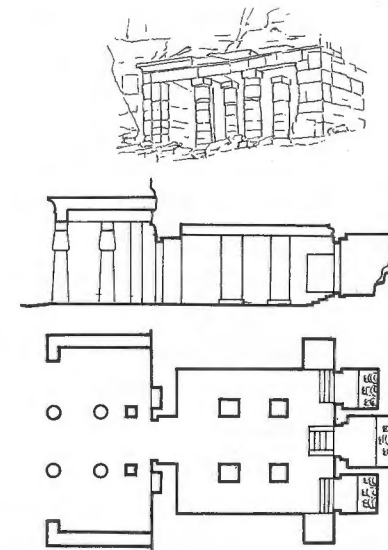
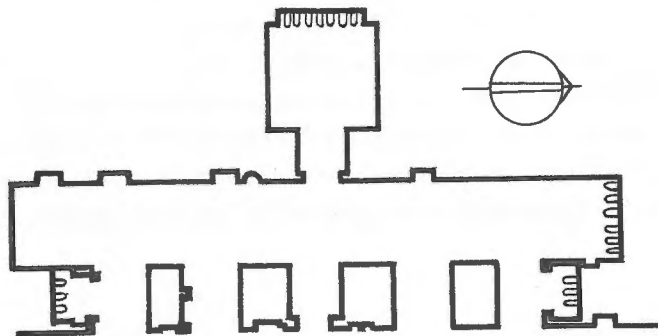
163. Plan and perspective of the Speos Artemidos at Beni Hassan.

times, chapel-like recesses containing inscriptions and statues cut in the rock were intended as cenotaphs.

The rock chapel of Horemheb is a cenotaph on a larger scale, cut perhaps in a disused quarry (fig. 164). The plan is similar to that of the typical contemporaneous rock-cut tomb, but with several entrance bays in the façade. Five apertures of various widths, separated by rock piers, open into a long transverse shallow hall (N.-S.), whose roof is cut into a flat vault. A central doorway leads through a short corridor into the axial sanctuary, on whose rear wall is a statue-group of Amun and six other gods.

All the walls were covered with low reliefs representing Horemheb in

164. Rock temple of Horemheb at Gebel Silsila.



165. Plan, section, and perspective of the rock temple at Wadi el Miyah dedicated by Seti I to Min.

triumph after his military victories in Nubia, in the presence of various deities or with later memorial tablets, inscriptions, statues in niches of pharaohs or individuals (Ramses II, Prince Kha'mwas, Siptah). An ingenious device was to cut a small shrine with a statue-group in its rear wall in the doorjambes of the two end bays as an ex-voto. The shrine to the north is that of Pesiur from the reign of Ramses II, while that to the south was cut by Panehsy in the reign of Merneptah.

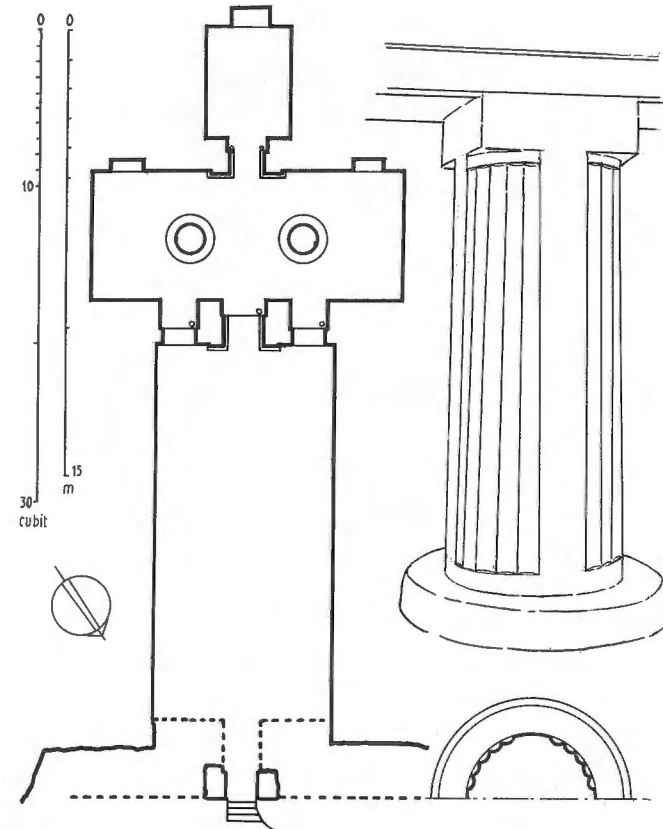
THE ROCK TEMPLE OF MIN (WADI EL MIYAH OR REDESIYA, EASTERN DESERT).³⁴⁹ In the desert to the east of Edfu is a small, well-proportioned rock temple dedicated by Seti I to Min, the protector of the desert routes. The plan is symmetrical (S.-N.). The front part abutting on the cliff is constructed of large sandstone blocks and consists of a hypostyle hall with open façade and four bud papyriform columns (and two pillars added in Ptolemaic times) (fig. 165). The façade, crowned with a cornice, has two columns with two corresponding antae, probably connected by screen walls reaching two-thirds of the height (according to Belzoni). Only the interior had been decorated. The central doorway to the rock-cut hall is flanked on either side by a niche with a statue representing the pharaoh standing.

The next hall is the "offering-table hall" square in plan, with four rock pillars, and three shrines, accessible through three steps each, opening in the rear wall and containing a statuary group of Pharaoh and two deities. A deep niche opens in each of the side walls, at the rear corners. The decoration consists of colored low-relief scenes of the ritual of offering. The ceiling above the central nave shows rows of winged disks alternating with cartouches, and above the aisles the sky pattern. This temple shows a marked affinity with the much larger rock temples of Ramses II in Nubia (Derr).

THE ROCK TEMPLE AT BEIT EL WALI (NUBIA).³⁵⁰ This was probably one of the numerous rock-cut temples of Ramses II in Nubia where he received a cult as deified pharaoh together with various deities; it is the smallest of the type. The temple is built on a symmetrical cruciform plan (N.-S.), consisting of a deep hall, a transverse hall with two columns, and a sanctuary (fig. 166). The whole is hewn in the rock, except the front battered wall of the deep hall with its central doorway. The façade was perhaps in the shape of a pylon, as at Garf Hussein and Abu Simbel.

In the deep hall only a pathway along both sides was roofed over with a vault (5.11 m. high), the central area being a "feast court" probably left open to the sky. The low-relief scenes on the walls are of great historical value, as they represent the wars against the Syrians, the Libyans (right wall), the triumph of Ramses II over the Ethiopians (left wall), and the rich tribute presented by the latter. The style of the scenes shows a certain freedom in the graphical rendering, featuring some perspective notations and a sense of humor. They are of the highest artistic value, though their technical execution is rather simple and sketchy.

The rear wall of the hall is battered, and a central doorway, to which two lateral ones were later added, opens into a transverse hall (4.15 x 10.4 m.; 3.02-3.29 m. high) whose rock ceiling is supported by two architraves N.-S. on two sturdy fluted columns. They are of the so-called "proto-Doric" type, with four vertical plane sides, inscribed, having entasis, a blank horizontal fillet at the top, and a square abacus. At each end of the rear wall is a niche containing a statuary group of Pharaoh between two deities. The low-relief scenes above the plinth feature religious subjects. Paint inside a red outline has been applied on a thin stucco layer. A frieze of kheker elements crowns the walls, just below the ceiling. The middle field of the ceiling is decorated with series of vultures



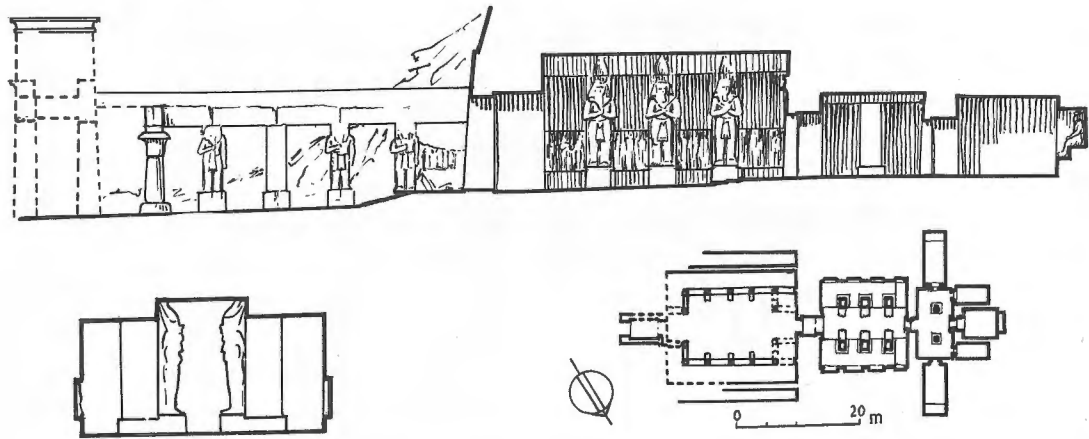
166. Plan of the rock temple at Beit el Wali and perspective of a column.

with outstretched wings. A central doorway leads into the sanctuary (2.8 x 3.6 m., 1.68-1.75 m. high), whose rear wall is cut into a niche with three statues representing Ramses II between two gods.

Four stages of construction have been recognized, all during the reign of Ramses II, and perhaps three different hands in the sculptures on the walls.

The temple was transformed into a church by the Copts: the deep hall became a three-aisled basilica roofed over with three brick vaults on supports and the niche in the sanctuary was further hewn into an altar.

THE ROCK TEMPLE OF PTAH (GARF HUSSEIN).³⁵¹ This temple was built by Prince Setau, governor of Nubia under Ramses II and dedicated to Ptah of Memphis. It is on a simple symmetrical plan (E.-W.): a court surrounded on its four sides by a portico on stout papyriform columns (east end) and pillars with abutting

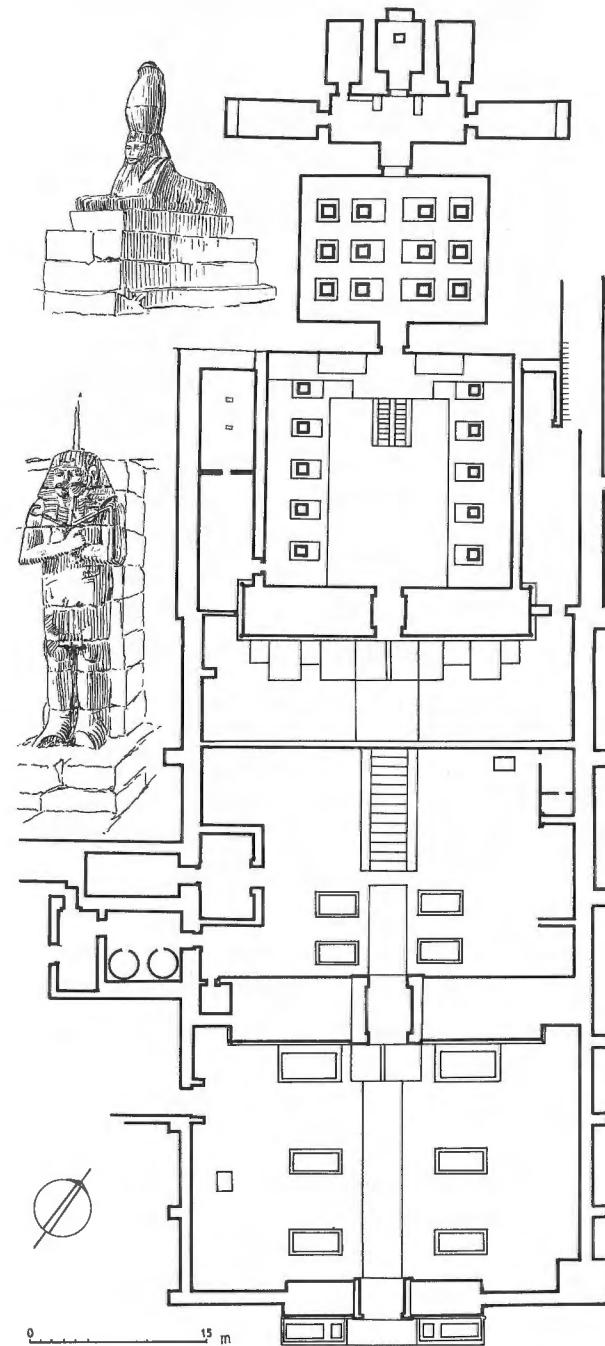


167. Section and plan of the rock temple at Garf Hussein.

standing royal statues (N., S.). The rear wall of the court is cut to imitate a pylon with battered faces and cornice (fig. 167). The pillared hall is on a square plan, with two rows of pillars with abutting sturdy royal statues and four niches in each of the lateral walls, containing statuary groups of Pharaoh between two deities. A transverse "hall of offering" with two pillars, flanked by two deep rooms, is connected to three shrines opening in its rear wall. The central shrine is the sanctuary for the sacred bark of Ptah set on a socle. A statuary group in a niche of the rear wall represents four seated deities: Ptah, the deified Ramses II, Ptah-Tatenen, and Hathor. The wall scenes in the bark-chapel depict Pharaoh embraced by Mut, offering before the hawk-headed bark, embraced by Pakhet, and offering before the bark of Ptah.

The similarity between this temple and the larger temples of Ramses II at Sebu'a is obvious in the layout of the court, the pillared hall (twelve pillars, instead of six at Sebu'a), and the rear apartments.

THE ROCK TEMPLE OF AMUN, RAMSES II AND RE'HORAKHTY AT WADI EL SEBU'A.³⁵² The site was called El Sebu'a in Arabic, "The Lions," on account of the sphinx-lined alley in the two forecourts leading to the stairway. The temple was built by Ramses II and called "House-of-Amun."³⁵³ The whole complex preceding the rock-hewn chambers is enclosed within a huge brick wall (1.0-1.8 m. thick) on a rectangular plan (35 x 80 m., N.W.-S.E.), with buttresses on the north and south external sides (fig. 168).



168. Plan of the rock temple at Wadi el Sebu'a, and perspective of a sphinx and of a pillar with statue.

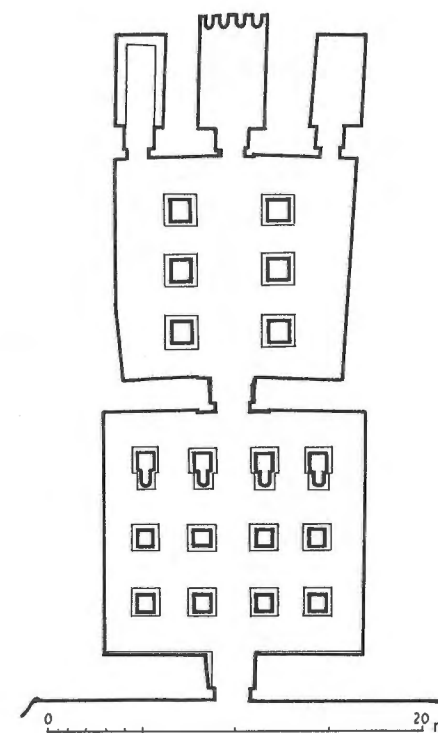
A stone gateway, flanked by a statue of Ramses II and a sphinx on either side, forms the entrance to the first forecourt, whose central alley is bordered by three lion-sphinxes on either side. At the rear of the forecourt a brick pylon forms the façade to the second forecourt, with a central pathway bordered by two large hawk-headed sphinxes. To the south is a small court with an altar dedicated to Re'Horakhty. A stairway leads up to the terrace of the section built in stone, abutting on the cliff. The part of the temple built in stone and hewn in the cliff is similar to the temple at Garf Hussein and corresponds to the typical tripartite cult temple: court, hypostyle hall, and sanctuary. A stone pylon (24.5 m. wide, 20 m. high), whose two towers are abutted by four colossi (6 m. high) on bases (1 m. high), forms the façade to the court beyond. On the walls are scenes representing Pharaoh sacrificing enemies in front of Amun-Re' and Re'Horakhty. Prismatic recesses for the flagstaves do not occur in these towers. The "feast court" is square (19.8 x 20.6 m.), bordered laterally by two porticoes with five pillars, fronted by standing statues of Ramses II. A slaughter court is laid out to the south, between the wall of the court and the enclosure wall.

A second stairway leads up to the second terrace running along the rock-cut part. The latter consists of a pillared "hall of appearance," a transverse "chamber of offering" flanked by a room at either end, and three rooms at the rear. The ceiling of the hall is supported by twelve square pillars, those on either side of the central alley having statues of Pharaoh abutting on them. The central rear room is the bark-chapel which contained the sacred bark and in the rear wall of which is a niche with a statuary group of Amun-Re', Ramses II, and Re'Horakhty. The wall scenes represent Ramses II embraced by Mut and Hathor, the offering of flowers to the royal bark and food to that of Amun-Re'.

A church was later made of the pillared hall, transverse chamber, and sanctuary.

The statuary shows a marked trend toward stylization, especially in the treatment of the sphinxes in broad planes. The standing figures, recalling by their stockiness those of Ramses III at Medinet Habu, already clearly express a debased style which soon declined further, even in Egypt itself.

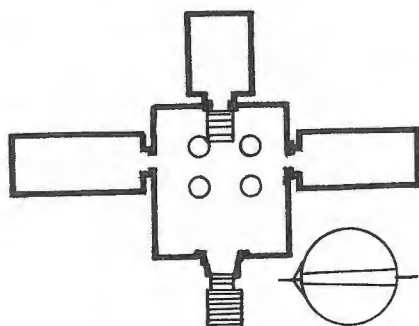
THE ROCK TEMPLE OF RE'HORAKHTY AT DERR.³⁵⁴ Built by Ramses II, this temple was called "Temple-of-Ramses-in-the-House-of-Re'."³⁵⁵ Nothing has remained



169. Plan of the rock temple at Derr.

of the pylon and the court which must have stood in front of the temple cut in the cliff. The plan (N.-S.) consists of two square pillared halls and three shrines at the rear. The first pillared hall (15-14 x 12 m.) is hewn in the rock, but masonry seems to have been used for stone roofing slabs. This hall presents the particularity of having two front rows of simple pillars (1 x 1 m.), while the third row consists of larger pillars (1.2 x 1.2 m.) with royal statues abutting against their north side. This arrangement does not conform to the usual one, where the pillars and adjoining statues face the central axis of the temple. Low-relief scenes with subjects of war (side walls) and triumph (rear) cover the walls (fig. 169), identifying the hall as a "feast court."

The second pillared hall called "hall of appearance" (12 x 13 m. and 5 m. high) has six tapering pillars (1.4 x 1.4 m.) with projecting bases; the



170. Plan of the rock temple of Amun-Re' and Thot at Abahuda, Gebel Adda.

pillars carry architraves set transversely. The process of laying out the plan and the low-relief work was carried out very inaccurately. The stucco-covered ceiling is painted with series of vultures in the central aisle, and a frieze of uraei alternating with the royal cartouche at the upper part of the walls. The scenes are of a religious character (jubilees given to Ramses, his purification, and reception of the bark). Pharaoh and a deity are shown on the sides of the pillars. Three shrines open in the rear wall, the central one intended to contain the sacred bark, as is shown on the walls. In its rear wall is the usual statuary group; the subjects here are Ptah, Amun-Re', the deified pharaoh, and Re'Horakhty.

THE ROCK CHAPEL OF MIN (EL SALAMUNI, AKHMIM).³⁵⁶ This small rock chapel was probably cut by Pharaoh Ay (Eighteenth Dynasty) on a symmetrical plan: forecourt, portico, broad hall, and deep hall with shrine. Later additions and restorations have altered the original project.

THE ROCK TEMPLE OF AMUN-RE' AND THOT (GEBEL ADDA).³⁵⁷ This is a small rock-cut chapel of King Horemheb (1342-1314 B.C.). A narrow doorway opening in the face of the vertically dressed cliff leads into a hypostyle hall with four bud papyriform columns off which open two side chambers and a central sanctuary to the rear (fig. 170). This temple was transformed into a Christian church and the low reliefs were painted over with scenes and patterns.

THE GREAT ROCK TEMPLE OF RE'HORAKHTY AT ABU SIMBEL.³⁵⁸ This large temple dedicated by Ramses II to Amun-Re' of Thebes and Re'Horakhty of Heliopolis

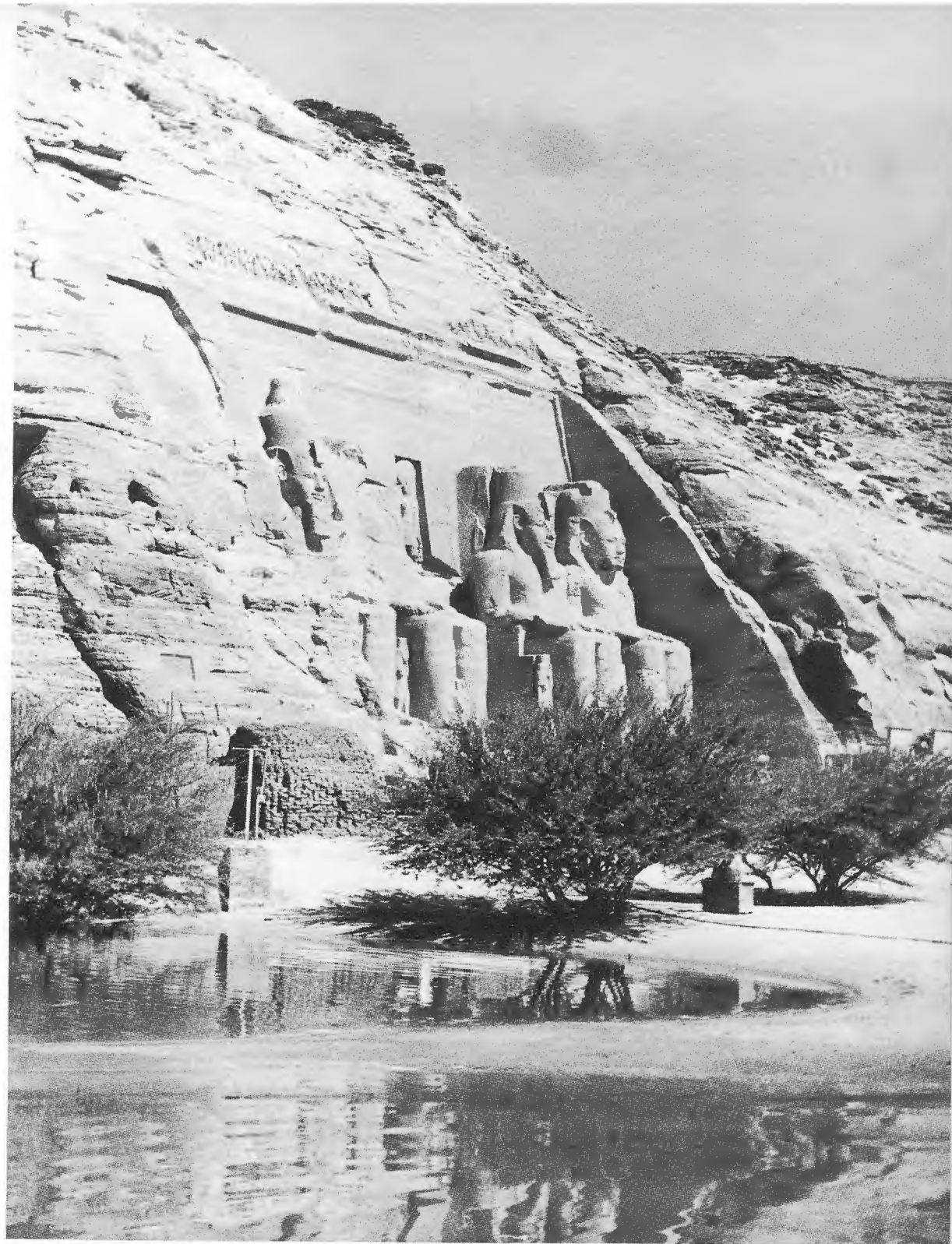


Plate 38. The Great Temple of Re'Horakhty at Abu Simbel (Ramses II), from the south (1957).

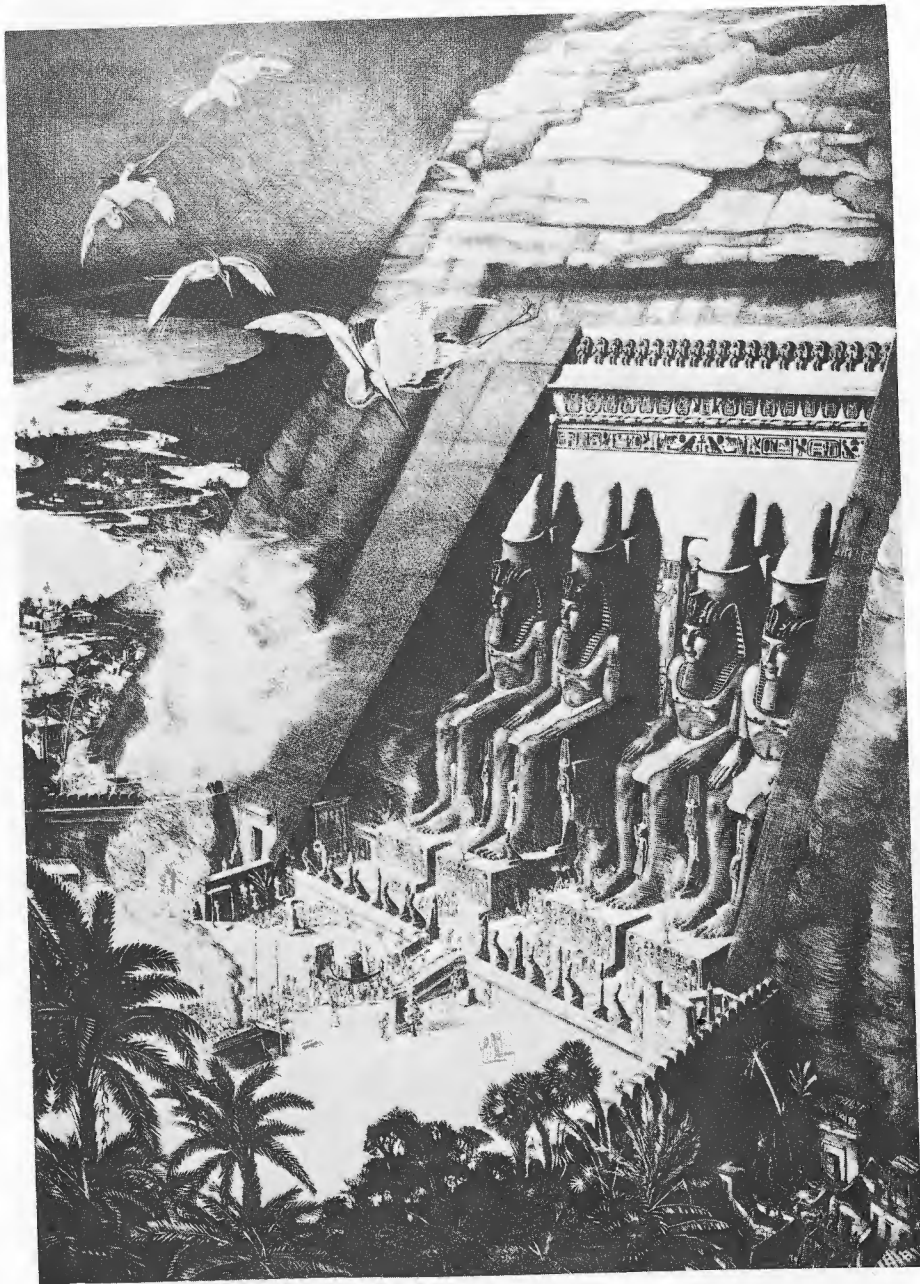
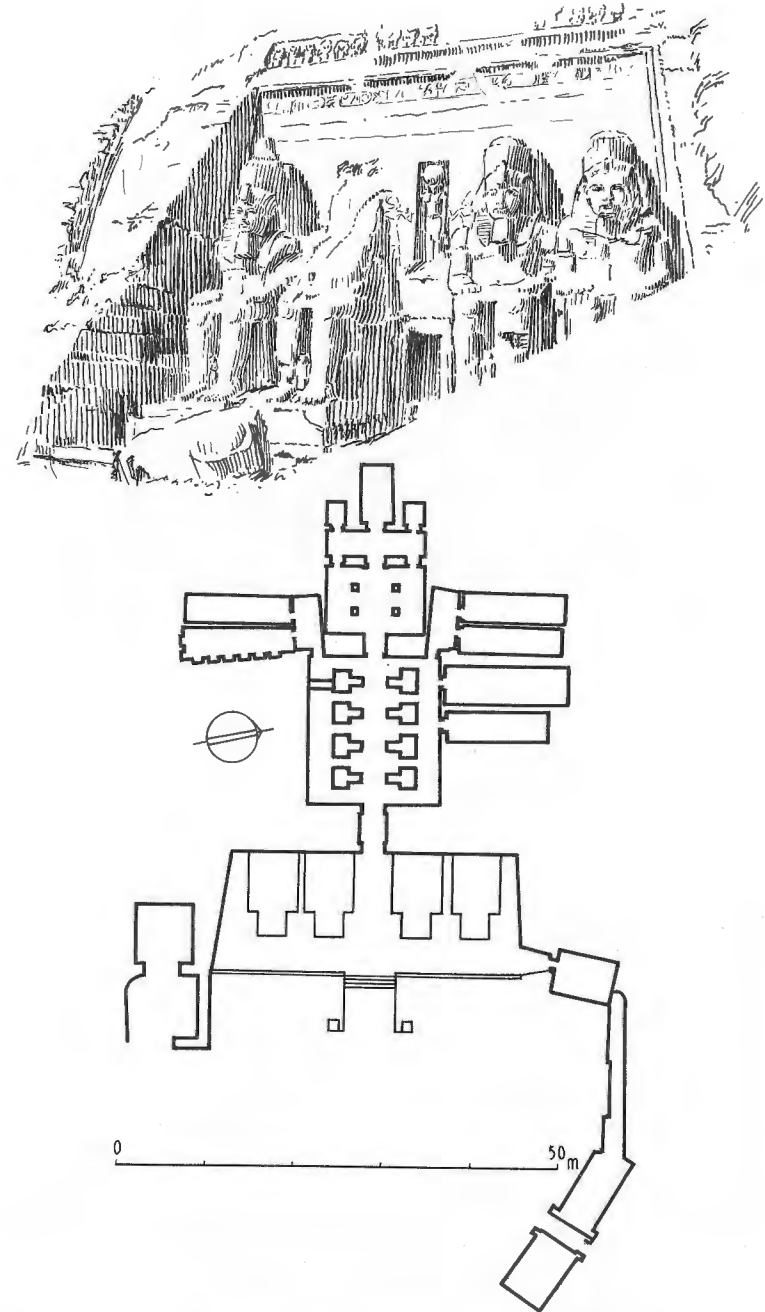


Plate 39. A festival celebrated in the temple of Re'Horakhty at Abu Simbel as restored by Takelam (1945).



171. Façade and plan of the Great Temple of Re'Horakhty at Abu Simbel.

is entirely hewn out of the cliff, which was then at some distance from the contemporary riverbank.

The approach to the temple façade is stepped: a forecourt leveled out of the rock and bounded to the north and south by brick walls precedes a higher terrace accessible by a stairway with a central ramp (pl. 38). At both lower ends of the stairway two recesses contained perhaps ablution basins and had representations of Ramses II burning incense to the gods. At the northeast corner of the terrace is an open court dedicated to Re'Horakhty which contains two bases, the south one with a stairway and figures of four worshipping cynocephali (baboons), the north one with a shrine for the sun god Khepri as a scarab and the moon god Thoth as a cynocephalus (pl. 39). This court of the altar corresponds to that laid out similarly at the northwest corner in the mortuary temples of the New Kingdom at Thebes. The terrace is bordered by a balustrade above a row of falcons and of statues of Pharaoh striding, facing east. Contrasting sharply with these in scale are the four colossal statues (over 65 ft. [19.81 m.] high) cut in the rock representing Ramses II seated, abutting on the battered façade of a pylon carved in the cliff (fig. 171). The whole composition is flanked by the two sides of the cliff cut into slanting buttresses (color plate X). The northern one was not finished and still shows the steps that were cut as a means of access during the carving. The sides of the buttresses do not protrude perpendicularly to the rear wall but they fan out. The peculiar love of Ramses II for colossi was never more clearly illustrated than in this façade. In spite of their scale the statues are well proportioned, except for the neck, and finely carved, even to representing the characteristic features of the pharaoh looking down to the crowd of worshipers (pl. 40). As in the other architectural statues of the same pharaoh, smaller statues of his mother, his wife Nefertari, and his children stand between and on both sides of his legs. Along the bases of the colossi are low reliefs representing chained prisoners kneeling and facing outward, Negroes to the south and Syrians to the north (pl. 41). It is noteworthy that the front sides of the bases of the colossi are not on a straight alignment, but rather on a curved one. On the cornice crowning the pylon is a row of cynocephali, raising both hands and worshipping the rising sun. In a niche above the entrance is a statue of a falcon-headed sun god and other figures representing pictographically the royal praenomen.



Plate 40. The southernmost colossus of Ramses II in the façade of Abu Simbel (Great Temple, 1957).

Plate 41. North side of the entrance passageway to the Great Temple at Abu Simbel. The scene in sunk relief on the socle of the colossus represents a row of bound prisoners on their knees (1957).



The plan of the temple proper is symmetrical and consists of two pillared halls, a transverse chamber, and a sanctuary, all set on one longitudinal axis E.-W. (180 ft. [54.86 m.] long). This arrangement is akin to that of the typical cult temple in the New Kingdom. Eight deep chambers of irregular curving shape open on the sides (5 on one; 3 on the other) of the great hypostyle hall and were meant to serve as storerooms for the sacred utensils and furniture, to be placed on the stone shelves running along the walls. In one room (II) the wall reliefs show seven scenes of provisioning with natron, wine, and linen, as well as of anointing and censuring, though an inscription describes specifically "the great splendid treasuries of the inside, of good sandstone, filled with all splendid stones."

The great pillared hall is rectangular (54 x 58 ft. [16.46 x 17.68 m.]) and is entered through a central doorway at the top of the stairway. Eight massive rock piers abutted by Osiride figures of Pharaoh (30 ft. [9.14 m.] high) flank the central nave (pl. 42). The four walls of the hall are covered with vividly colored low-relief scenes depicting military and religious subjects featuring Ramses II, and among which is the famous battle of Qadesh (north wall). This hall corresponds to the court surrounded by columned porticoes in the typical cult temple. The colossal statues in the hall (pls. 43, 44, 45) and those of the façade are among the most momentous achievements of Egyptian architectural sculpture. It has been noticed that the only lighting they receive comes through the eastern doorway, so that the faces of the royal statues are brought to life by the first rays at sunrise but gradually fade into stark immobility as the rays lower toward the feet.

The ceiling of the hall is decorated in the usual way with a series of vultures with outstretched wings flying toward the sanctuary, alternating with the cartouches containing the royal names, and above the aisles, with stars. The ingenious planning of the lobby set askew in front of the side storerooms, to avoid the corners of the second hall, is noteworthy. The second colossus in the northern row shows a restoration at the knee, consisting of inserted patching stones coated with a thick layer of plaster modeled to look like the original carved rock beneath (pl. 46). Cracks and defects of the rocks are usually treated in this way.

The second pillared hall is smaller (36 x 25 ft. [10.97 x 7.62 m.]) a "hall of appearance" set transversely with four rectangular rock piers. Three doorways open from it into a shallow transverse "hall of offering" fronting three

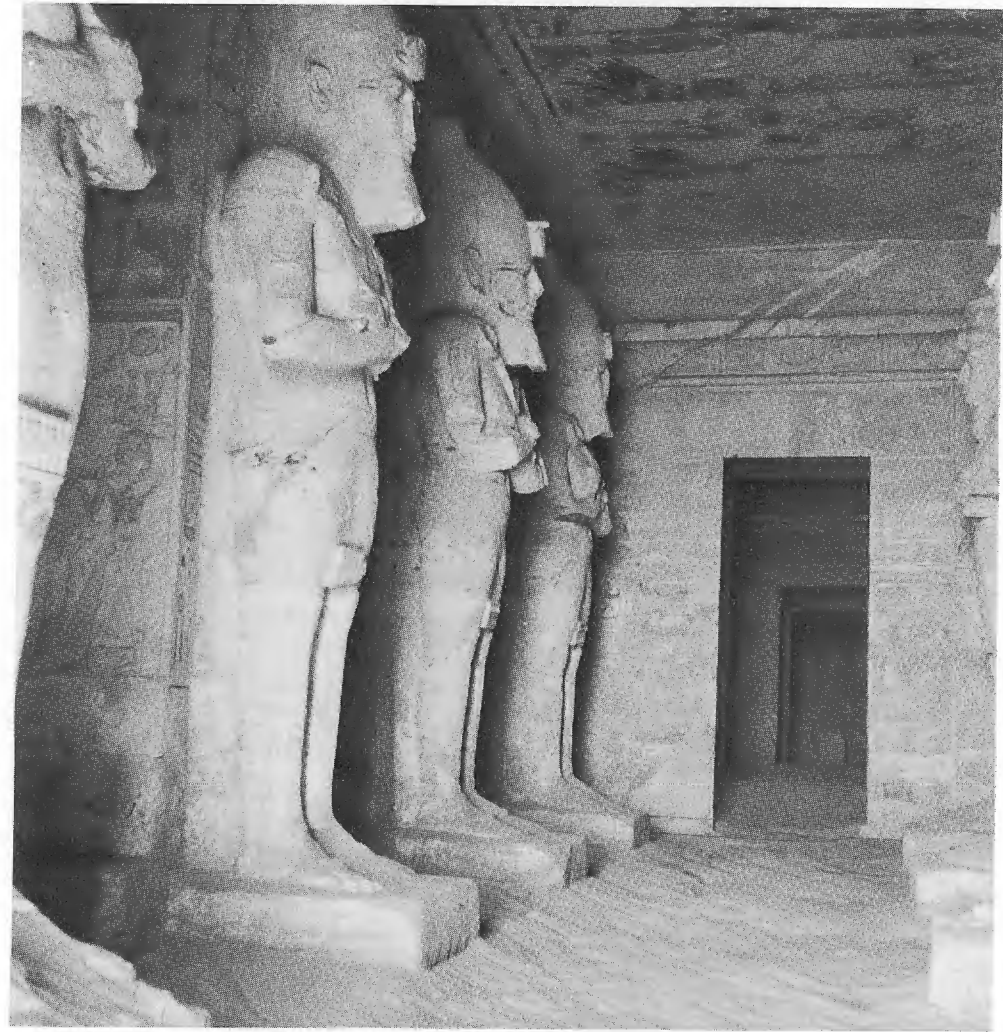


Plate 42. Hypostyle hall with colossal statues of Ramses II in the front hypostyle in the Great Temple at Abu Simbel (1957).



Plate 43. Colossus of Ramses II in the front hypostyle hall of the Great Temple at Abu Simbel (north row, southernmost pillar).

Plate 44. Photogrammetric elevation of the colossus of Ramses II (north row, southernmost pillar, hypostyle hall of the Great Temple at Abu Simbel).

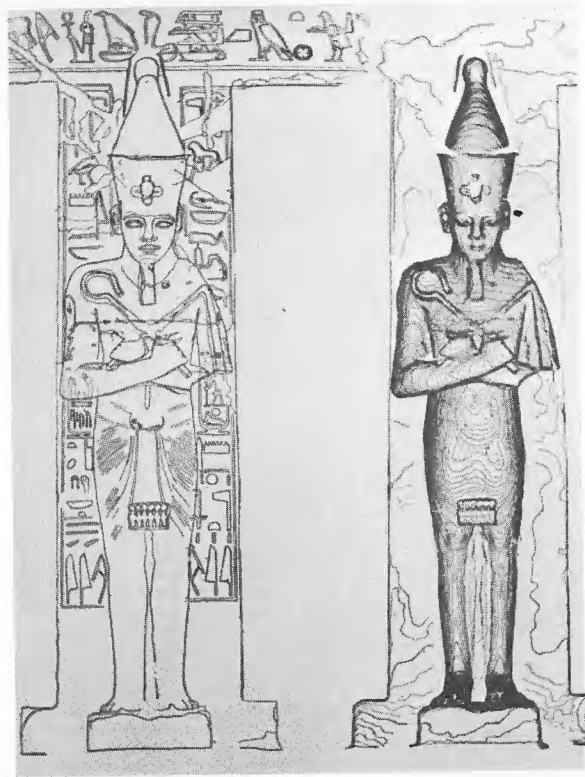


Plate 45. Photogrammetry of the profile of the head of Ramses II (westernmost colossus in the north row, hypostyle hall of the Great Temple at Abu Simbel).

Plate 46. Patching and correction of the apron and knee of the second colossus in the north row (hypostyle hall of the Great Temple of Re'Horakhty at Abu Simbel; 1957).



rooms. The larger one in the middle is the sanctuary, having a rock socle for the sacred boat in its center and four seated statues abutting its rear wall: Ptah, Amun, the deified Ramses II and Re'Horakhty. The statues of Ramses II and Amun are located so that they are lighted axially by the sunrise twice a year, on February 20 and October 20. Here again the cult statues and the bark are in the same sanctuary, for on the socle still in situ were placed the barks, probably those of Pharaoh and Amun. A special rock chapel south of the temple was to receive the barks of Re'Horakhty and Thot, as depicted on its walls.

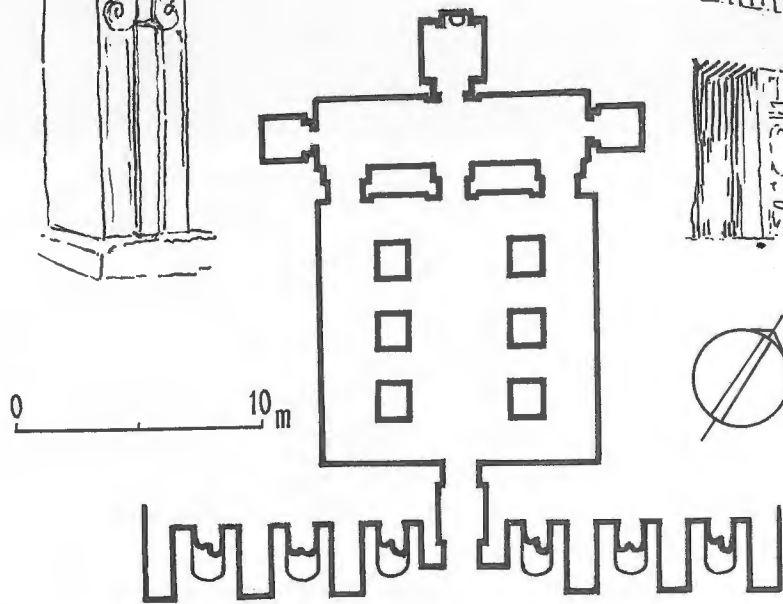
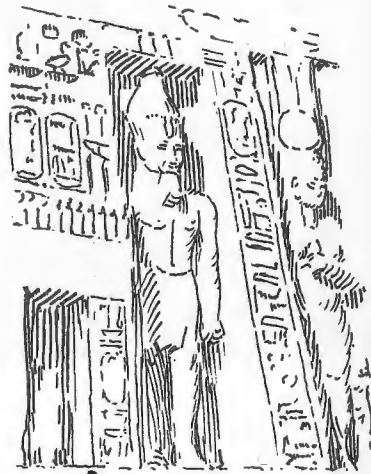
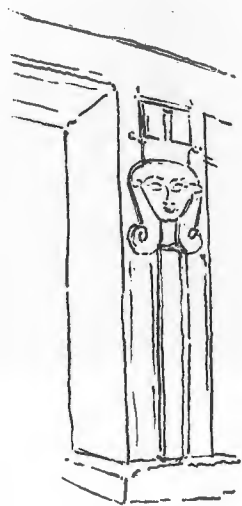
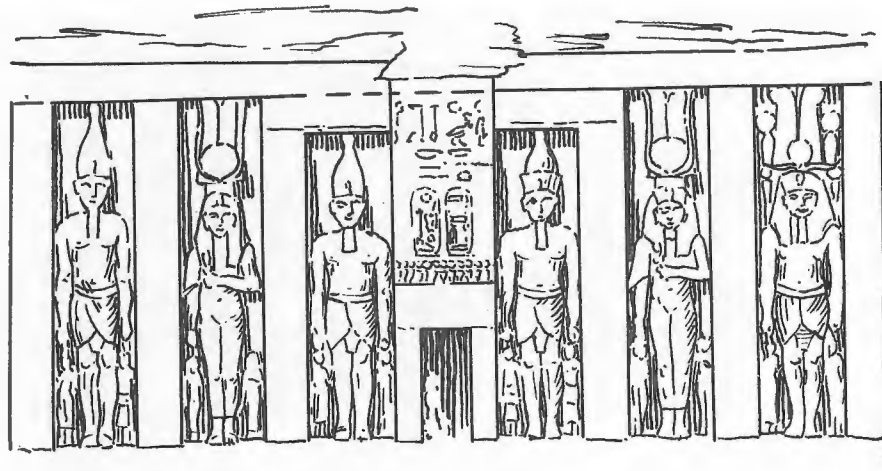
In the treatment of the façade the slanting buttresses which fan out and the curving alignment of the bases of the colossi are two features intended to create illusions of perspective. The effect is probably designed to emphasize the depth of the composition. This is already a manifestation of the mannerist trend that pervades the design of the entrance gateways of the mortuary temple of Ramses III at Medinet Habu. In the hypostyle hall there is evidence of the hasty and careless execution, not to mention the debased style, of the architectural statuary.

THE ROCK TEMPLE OF HATHOR AT ABU SIMBEL.³⁵⁹ At some distance to the north of the great temple of Ramses II is the smaller one dedicated to Hathor of Ibeshek and the deified Nefertari, the wife of Ramses II. The building inscription describes the temples as "a house hewn in the pure mountain of Nubia, of fine, white and enduring sandstone, as an eternal work."³⁶⁰ The approach has disappeared. The façade (pl. 47) in the shape of a pylon (92 x 39 ft. [28.04 x 11.89 m.] high), once crowned with a cornice, shows the unique feature of two colossi (33 ft. [10 m.] high) of Pharaoh flanking that of Queen Nefertari standing on either side of the central doorway, in niche-like prismatic recesses. Here also smaller figures of princes accompany the large statues. Deep slanting buttresses separate the statues and the whole composition is flanked by one side projecting at right angles to the façade on the south and by a well-dressed area of rock to the north, covered with the memorial inscriptions of private people. While the nearby temple of Re'Horakhty clearly faces east, this small one of Hathor faces southeast, deviating 45° from the axis of the larger one and making with its façade an angle of 135°. Its location seems to imply a subordination to the larger one (pl. 48).

The plan of the rock-cut temple is strictly symmetrical (fig. 172). The square hypostyle "hall of appearance" has six square pillars flanking the wide



Plate 47. Façade of the small temple of Hathor and Nefertari at Abu Simbel (1957).



172. Elevation, plan, and perspectives of the small rock temple of Hathor at Abu Simbel.



Plate 48. The two temples at Abu Simbel, looking southwest (1957).

nave. These pillars are decorated in relief with a Hathoric sistrum on the side facing the central nave. They are therefore regarded as Hathoric pillars (pl. 49). The three other sides of the pillars as well as the wall are covered with low-relief scenes of Pharaoh and the queen in front of various deities. Three doorways in the rear wall open into a transverse "chamber of offering" with a small room at either end and a central rear sanctuary.

The sanctuary presents the unique feature of a shrine with a roof supported on sistra and the representation in high relief of the cow Hathor, probably flanked on one side by a statuary group of Ramses II and Nefertari. This is similar, but in rock sculpture, to the statue of the cow Hathor protecting a figure of the monarch which was usually placed in the chapel of Hathor in mortuary temples (e.g., Deir el Bahari), although the goddess is worshiped here as the mother of Horus rather than for her protection of the deceased. The reliefs on the lateral walls represent a figure symbolizing the Nile bearing offerings, Ramses II and Nefertari seated on a throne receiving incense and libation (north), and Nefertari adoring Mut and Hathor (south). Two other rooms were to flank the central sanctuary, had the project ever been completed.

THE TEMPLE OF HATHOR AT SERABIT EL KHADEM (SINAI).³⁶¹ Although not strictly a rock-cut temple, this temple is more akin to it than to the ordinary temple built in the valley. The pharaohs of the Eighteenth Dynasty showed much building activity on the site of the Middle Kingdom temple in the mining district of Serabit el Khadem. Hatshepsut and Thutmose III built there together from Year 5 to Year 22, and the temple in their reign stretched from the sacred cave of Hathor to the stone pylon. It consisted of a court with a two-columned portico in front of the cave, a sanctuary, a large court with lateral hall dedicated to Hathor, two pillared halls, and a stone pylon fronting the monument (fig. 173). To the north of this pylon is the shrine of the kings, in the shape of a portico on fluted columns (four) and pilasters abutting on the rock cliff. The decoration represents the earlier pharaohs Snefru and Amenemhat III, and Hatshepsut with the deities Soped and Hathor.

The axis of the plan is sharply bent in front of the sanctuary, owing to the topography, and the later constructions run along the south side of the earlier approach to the sacred cave. All the old stelae were left in situ by the builders of the New Kingdom. A northern doorway connected the earlier

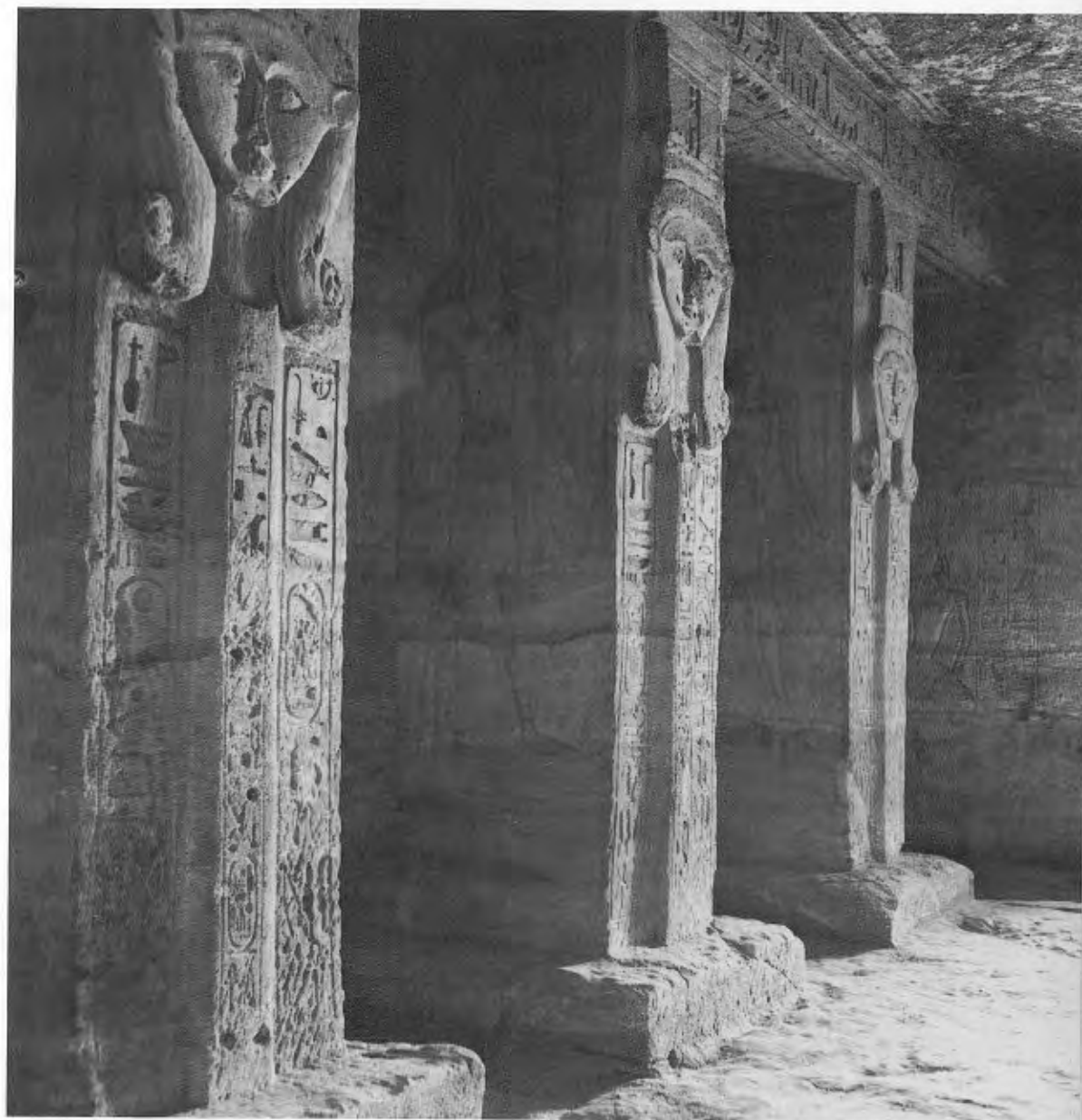
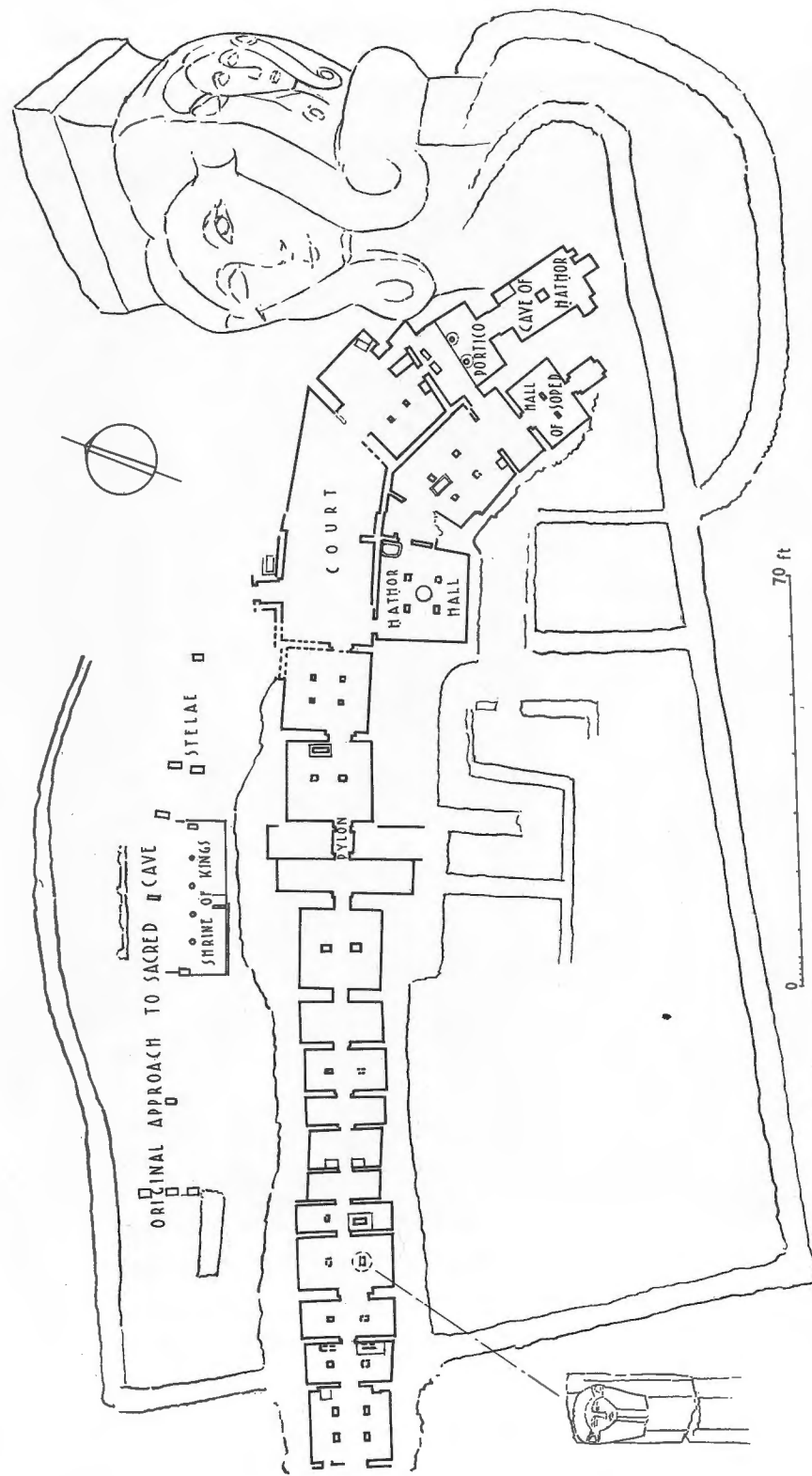


Plate 49. The north row of Hathoric pillars in the small temple at Abu Simbel (1957).



173. Plan of the temple of Hathor at Serabit el Khadem (from pylon eastward) by Hatshepsut and Thutmose III, and detail of a Hathoric pillar of Thutmose III (right) and Amenhotep III (left).

pathway to the court in front of the Eighteenth Dynasty sanctuary.

The pylon (26.5 ft. x 5.67 ft. [8.08 x 1.72 m., 3.96 m. high] 13 ft. high) consists of an outer casing retaining a rubble core and decorated with a scene of Thutmose III making an offering to Hathor. The two pillared halls behind the pylon are not laid out on its axis, but irregularly to conform with the curved axis of the layout. The one next to the pylon had two Hathoric pillars, while the second one had four simple square pillars.

To the south of the court is a square Hathor-hall, with four Hathoric pillars and a central circular basin. Such water basins are to be noticed in every hall of the complex, numbering four on the way to the shrine, and this fact points to the importance of ablutions in this particular cult, comparable to its role in Semitic cults. The Hathoric pillar features at its top a face of the goddess with curling hair set in high relief on two opposite sides and a smaller face in low relief on the other two sides, topped with a cavetto-block.

The sanctuary was rebuilt by Ramses IV. The portico in front of the shrine rests on two fluted columns (tapering, sixteen-sided) of Amenemhat IV. The shrine is a deep room cut entirely in the rock with one central rock pillar.

The later history of this temple can be traced from the addition by Thutmose III of a court and a two-pillared hall in front of his pylon. No fewer than ten contiguous chambers or courts were subsequently added to the front on the same longitudinal axis (E.-W.) by successive pharaohs (Thutmose IV, Amenhotep III, Seti I). Ramses II, Merneptah, Seti II, and Ramses III, IV, and VI rebuilt and added various elements.

The worship in this temple, with its characteristic features of burnt sacrifices, elaborate system of ablutions, dedications of sandstone cones, and sacred sleeping cubicles, shows a Semitic origin or at least marked Semitic influences.

THE MORTUARY TEMPLES

The separation of the mortuary temple from the tomb itself marks an ultimate attempt at insuring security against tomb robbers. Amenhotep I had built his mortuary temple south of Dra' abul Naga and cut his tomb some little distance away (1 km.) in the cliffs behind. He was followed by all the

pharaohs who cut their tombs in the so-called "Valley of the Kings" and built their mortuary temples in a row facing southeast, possibly in the direction of the temple at Luxor, along the lower ridge of the hills. From north to south there are the temples of Seti, Thutmose III, Amenhotep II, Ramses II, Thutmose IV, Merneptah, and Ramses III at Medinet Habu. Every pharaoh built his temple farther to the north, beyond that of his predecessor, and the pharaohs of a new dynasty had to squeeze theirs in between the existing temples, beginning again from the south.

The rock-cut tombs were no longer conspicuous like the royal pyramids of the Old or the Middle Kingdom, but were supposed to be hidden; and there was no direct connection between the mortuary temple and the tomb. Some of the mortuary temples in Western Thebes, such as that of Ramses II (Ramesseum) or of Ramses III (at Medinet Habu), were in no way a lesser achievement than the huge cult temples on the eastern bank, at Karnak or Luxor.

The mortuary temple³⁶² from the Eighteenth Dynasty to the Twentieth Dynasty was essentially a temple dedicated to Amun and in which funerary ceremonies were performed in an adjacent chapel in honor of the deceased pharaoh. To these two constituent elements, the sanctuary of Amun and the mortuary chapel, is always added a third one dedicated to the sun god Re'Horakhty. Various dependencies such as magazines or a slaughter court may be laid out around the main chapels. The temple resembles in many respects the mortuary temple of the pyramid of the Old Kingdom. However, whereas the latter was dedicated to the pharaoh alone, the mortuary temple of the New Kingdom is a temple of Amun in which a cult for the deceased pharaoh is also celebrated. This shows the evolution of the religion ideology about the divine pharaoh and its clear deterioration.

THE SANCTUARY OF AMUN. That the mortuary temple was essentially a temple of Amun is proved by the fact that the main sanctuary was laid out on the central axis and was dedicated to Amun. It consists of two rooms, one containing the bark of Amun and fronting the second, which features a double false-door in its rear wall. In the earliest temple, that of Hatshepsut at Deir el Bahari, oriented like the nearby temple of Mentuhotep (Eleventh Dynasty) toward Karnak, the two rooms are vaulted and flanked by small niches. On both sides of the room of the bark of Amun are that of Mut and that of Khonsu

(Thutmose III, IV, Seti I, Merneptah, Siptah). Later, the room of the bark is enlarged into a hall with four pillars while the rear room assumes the shape of a transverse room, presumably containing a double false-door (Ramses II, Tausert, Ramses III). Whether the sanctuary was intended to contain a sacred bark for the whole year or only the bark of Amun when it came to visit the western temples is not clear.

The opinion that the temples were oriented toward the temple of Amun at Luxor is debatable. This orientation would not be accurate for all the temples and it is safer to explain it as a direction perpendicular to the riverbank.

THE ROOMS FOR THE MORTUARY CULT. These are set to the left of the sanctuary of Amun and quite separate from it. They can be made accessible from the court (Hatshepsut, Thutmose I), or from a transverse secondary hall (Thutmose III, IV). They consist of two vaulted rooms, the second one having a false-door set in its rear wall. This false-door is the same element as the one that was set in the offering chapel of the royal or private tombs of the Old Kingdom and in the offering chapel of the royal tombs of the Middle Kingdom.

Toward the end of the Eighteenth Dynasty this offering chapel was replaced by a suite of one or two halls and a sanctuary of three cellae similar to but smaller than the main sanctuary suite and set parallel to the main axis, south of it. This "contiguous temple" is accessible from the court through a processional passage, and is intended essentially for the deified pharaoh and occasionally for his father (Seti I for his father Ramses I).

In the Twentieth Dynasty the rooms seem to be intended for the mortuary cult of Pharaoh as an Osiris (Ramses III at Medinet Habu).

THE ALTAR COURT OF RE'HORAKHTY. To the right of the sanctuary (N) of Amun and independent from it is a court preceded by, and backed with, a hall, which contains an altar. This is a platform to which a stairway ascends from the west so that the ceremonies to the sun could be performed while facing east.

THE GENERAL PLAN OF THE MORTUARY TEMPLE. The three basic elements described were usually set side by side around a central court (Hatshepsut) or columned hall (Thutmose II, III, IV, Seti I), or at the rear of a series of two transverse columned halls, preceded by one or more large hypostyle halls (Ay-Horemheb, Ramses II, III).

There were sometimes other elements such as an ambulatory (Thutmose II), a treasury (Seti I), magazines (Seti I, Ramses II) or a slaughter court (Seti I, Ramses II[?]). The outline of the symmetrical plan is rectangular.

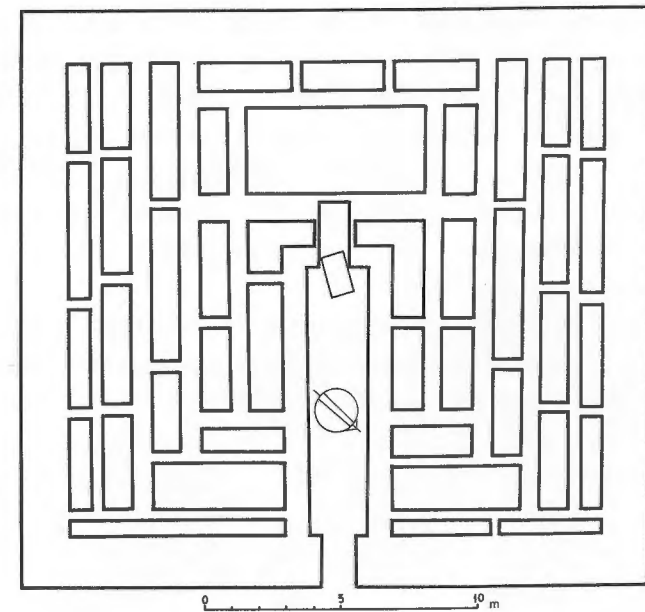
TYPICAL EXAMPLES OF MORTUARY TEMPLES FROM THE NEW KINGDOM

THE MORTUARY TEMPLE OF QUEEN TETISHERI.³⁶³ To the east of the cenotaph of the queen at Abydos stands the mortuary temple, built of bricks stamped with the name of Pharaoh Ahmose. The plan is rectangular, symmetrical about an E.-W. axis passing through the main entrance in the east side of the enclosure wall (fig. 174, 175). Two wells had been sunk just behind the entrance on both sides of this axis. The doorway of the temple proper opens in front of the main entrance and leads onto a brick-paved square court. It is surmised that the sanctuary was to the west of this court, although nothing but four silos have actually been found there.

The pyramid complex of this queen is mentioned on the famous stela found in the neighboring shrine, dedicated by Ahmose to his grandmother Tetisheri: "My majesty has desired to have made for her a pyramid and a house in Ta-djeser, as a monumental donation of my majesty. Its lake shall be dug, its trees shall be planted . . ." ³⁶⁴

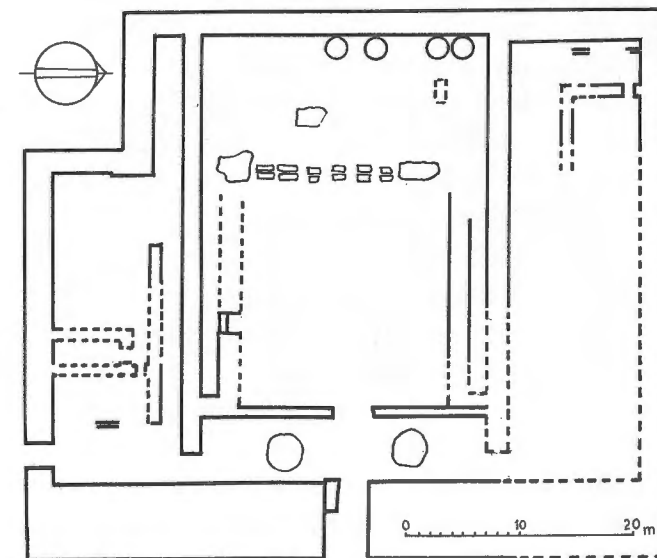
THE MORTUARY TEMPLE OF THUTMOSE II.³⁶⁵ This small temple was originally asymmetrical. The rectangular plan consisted of two sections set side by side: the wider one having a hypostyle hall on a square plan with four columns, followed by a transverse hall with two columns and three contiguous chapels; the other having two rooms (right), one behind the other (see fig. 188:1). Thutmose III enlarged this temple and altered its hypostyle hall into a deep hall and a front room, backed with a staircase. He added a large hypostyle hall with sixteen columns in front and surrounded the existing structure with a wall, enclosing an ambulatory on three sides. The two hypostyle halls in the original project can be regarded as the prototypes of those in later mortuary temples. In the second stage the front hypostyle hall preceded a deep hall, probably to contain a bark.

THE MORTUARY TEMPLE OF HATSHEPSUT (DEIR EL BAHARI).³⁶⁶ Unlike all the other mortuary temples, this one is terraced and abuts on the cliff in which it is



174. Plan of the shrine of Queen Tetisheri at Abydos.

175. Plan of the mortuary temple of Queen Tetisheri at Abydos.



partly hewn (pl. 50). The three essential groups of elements in the mortuary temple are recognizable, however: the large open court surrounded by a columned portico is the prototype of the hypostyle hall, flanked as will be usual later, by the court of Re'Horakhty (right) and the mortuary chapels of Hatshepsut and her father Thutmose I (left). The chapel of Amun-Re' is on the main axis at the rear of the court and it consists of two deep vaulted rooms, one behind the other. These are probably the bark-chapel, according to the evidence of the decoration of the wall in the front one, and the sanctuary proper for the cult statue. The decoration of the dado in the latter with representations of gardens and ponds alive with bird and fish is never found in other sanctuaries. A doorway was later pierced in the rear wall (Ptolemaic Period) and it cannot be ascertained whether or not a double false-door existed as at Qurna and Medinet Habu.

That the large altar in the court, north of the colonnade to which a stairway ascends from the east, is dedicated to Re'Horakhty is proved by an inscription of Hatshepsut on it. It is preceded, as in later temples, by a small vestibule with three columns.

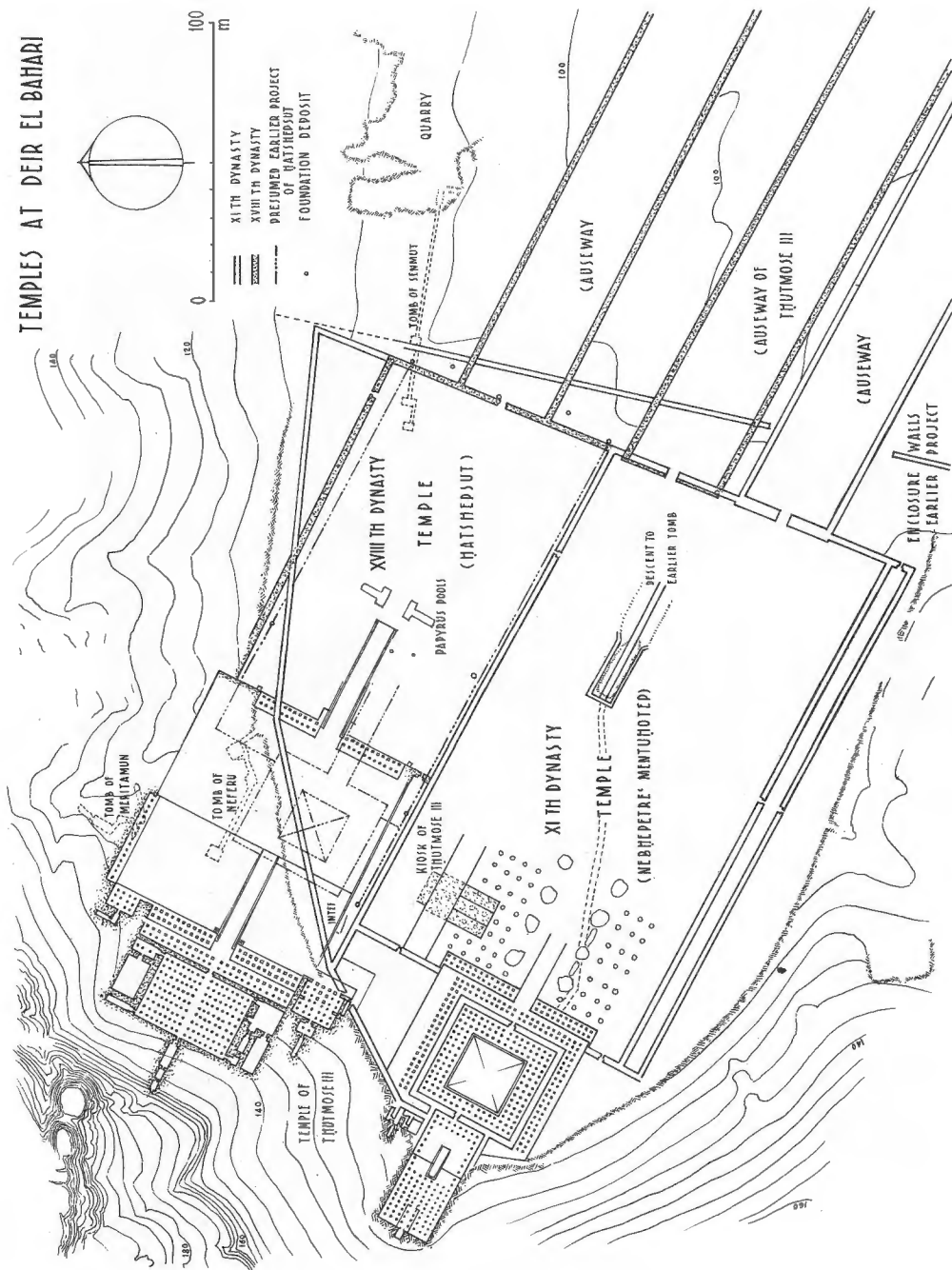
The mortuary cult-rooms (S.) consist of two vaulted chambers set side by side and opening onto a court, the larger dedicated to Hatshepsut, the smaller to Thutmose I. A false-door was set in the rear wall of each and the vault was decorated with astronomy scenes relating to the Osirian cult. The scenes on the walls depict the offering rites.

The temple, named "Most Holy" (lit. "Holy-of-Holies," *Djeser Djeserw*), is one of the most stupendous edifices of Egyptian architecture. The famous queen's counselor and architect Senmut,³⁶⁷ assisted by Dedias, chief of the decorators of Amun, is probably responsible for this project begun in the fifth year or eighth year of the reign of Thutmose III.

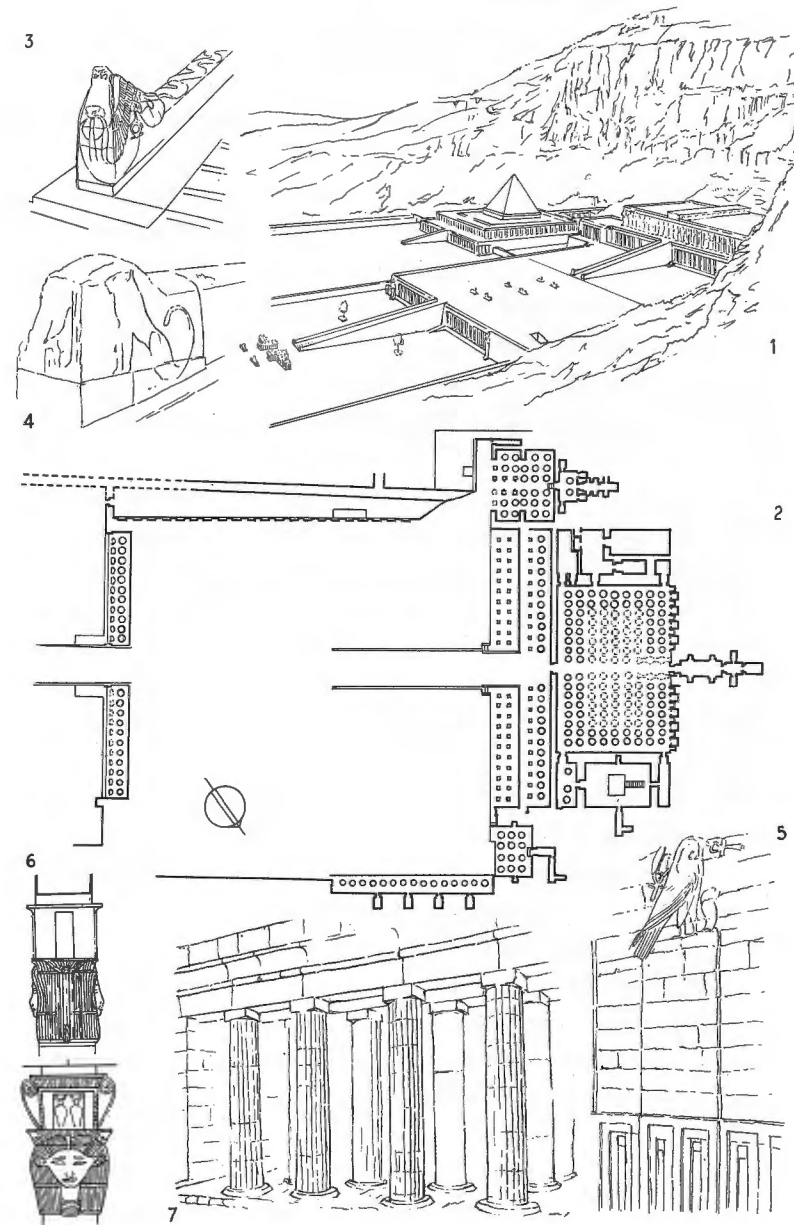
Part of the site chosen was the triangular area between the earlier discarded shield-shaped enclosure of Mentuhotep's temple and its actual buildings. According to Winlock, one of the latest Egyptologists to excavate the site, there seems to have been an earlier project which was dropped, as was an earlier project for the adjacent temple of Mentuhotep (Eleventh Dynasty). Hatshepsut built her eastern enclosure wall in a line with that of the latter temple and she used its E.-W. enclosure wall as her own boundary to the south (fig. 176). From the locations of the foundation deposits uncovered, Winlock³⁶⁸ could deduce that they did not correspond with the actual boundaries,



Plate 50. The mortuary temple of Queen Hatshepsut, as seen from the top of the northern cliff at Deir el Bahari.



176. Layout of the mortuary temple of Queen Hatshepsut at Deir el Bahari.



177. The mortuary temple of Queen Hatshepsut: 1, restored bird's-eye view; 2, plan; 3, end of the balustrade of the upper stairway; 4, end of the balustrade of the lower stairway; 5, palace façade paneling on south retaining wall; 6, portico of Anubis chapel; 7, side and front elevations of a Hathoric capital from the Hathor chapel.

but rather with a quite different plan copied from that of the temple of Mentuhotep, even to the asymmetrical arrangement of the court. He found a corroboration of this hypothesis in the fact that the presumed project seems to have been a copy on a reduced scale (5/7) from the larger nearby temple. This 5/7 ratio could have been adapted quite easily when using the cubit and its subdivision into 7 palms. I have proved, however, that both projects conform to a general modular layout and that they are very similar in harmonic design. Although the plan of the new project did not correspond to that of Mentuhotep's temple, many of the elements are similar, such as the terraced layout, and the approach by a ramp flanked at its upper end by the two aisles of a pillared portico, and the square pillar, not to mention the general setting and the rear part hewn out of the cliff.

From the temple an alley and a causeway, both bordered by sphinxes with Hatshepsut's head every 10 meters, lead down to the valley portal, probably set on the quay of a basin and canal near a palace.³⁶⁹ The court is trapezoidal and along its axis runs an alley bordered with sphinxes and flanked by two T-shaped papyrus pools with flower beds about them.³⁷⁰ The temple is approached from two terraces at two different levels created by leveling off the slope and connected by two axial ramps with central stairways. A portico stretches at the rear of both first and second terraces, and a third portico at a higher level forms the façade to the actual temple. This feature of the portico, whose rear wall acts as a retaining wall for the terrace behind, is characteristic of this monument, though it occurred once in the rock tombs from the Middle Kingdom at Qaw. It has been suggested that the stepped terraces and the vertical elements such as the contiguous bays or the pillars recall aesthetically the vertical cliffs and deep furrows in the mountain cirque (fig. 177). Each of the three porticoes has a row of piers in front of a row of columns (lower and upper rows), or two rows of piers (middle row). Originally the outer piers in the upper portico had Osiride statues of the queen abutting on them, but they were converted into simple piers by the jealous Thutmose III. The middle portico is famous for the beautiful colored low-relief scenes of the queen's expedition to the country of Punt, now vocalized as Pwene (Somaliland; on the left), and the theogamy of the queen's mother or her divine marriage with Amun (on the right). The scenes of the trade expedition to Punt feature the reception of the Egyptian envoy by the native ruler Parohu against a background of domed houses set on stilts, the peculiar deformed wife of the ruler followed

by her saddled donkey described humorously as "the ass which carries his wife," and the incense and exotic trees being loaded onto the ships. These scenes are treated in registers with exactness of detail, and reveal a fondness for curved lines and slender figures.³⁷¹

The lower terrace was planted with palm trees and papyrus. Each of the parapet walls bordering the first ramp is decorated in low relief with the figure of a lion guarding the entrance. On the parapet of the ramp to the middle terrace a huge cobra topped with a falcon with outstretched wings coils its wavy body upward along the coping. In the lower portico the scenes of the transport of two obelisks on boats from the quarries at Aswan to Thebes and the erection of the obelisks are noteworthy (S.). They are usually interpreted as those erected by Hatshepsut in the hypostyle between pylons IV and V, of pink granite lined with *dja'm*-gold.

On the north side of the middle terrace an unfinished lateral portico with fifteen columns of classical aspect (sixteen-sided columns) runs for some distance, beginning from the corner of the terrace (color plate XI). The south external wall of this terrace acts as a high retaining wall and is decorated with a plinth with recessed paneling, surmounted at intervals with rectangular motifs representing the plan of the palace forming *serekh* panels topped with a royal falcon and uraeus. At the same level as, and accessible from, the middle terrace are two chapels, one dedicated to Anubis (north) and the other to Hathor (south). The chapel of Anubis is preceded by a deep portico with three rows of beautiful polygonal columns, four to each row. The sanctuary is on a winding plan, similar to that of the chapels in the north and south palace-façades in Neterikhet Djoser's complex (Third Dynasty, Saqqara). The chapel of Hathor is larger than that of Anubis and consists of two transverse columned halls "of offering" and "of appearance" connected by a large bay with a row of columns. The middle alley in the front hall is bordered by two rows of Hathoric columns, the capitals of which have two faces of the goddess with cow's ears and are surmounted by an abacus in the shape of a shrine (pl. 51). A small third room with two columns precedes the vaulted sanctuary, deeply cut in the rock (pl. 52), decorated with a scene of Hatshepsut nursing at the udder of the cow of Hathor. At the base of the lateral walls are niches carved in low relief with pictures of Senmut which would have been hidden behind the opening door-leaves of the niches, a clever device of that favorite to accompany his queen in Hathor's presence. The cult statue in the shape of



Plate 51. Hathoric capital from the Hathor chapel in the mortuary temple of Hatshepsut at Deir el Bahari (1952).

Plate 52. The chapel of Hathor at Deir el Bahari. On the rear wall Hatshepsut is seen nursing at the udder of the cow of Hathor.

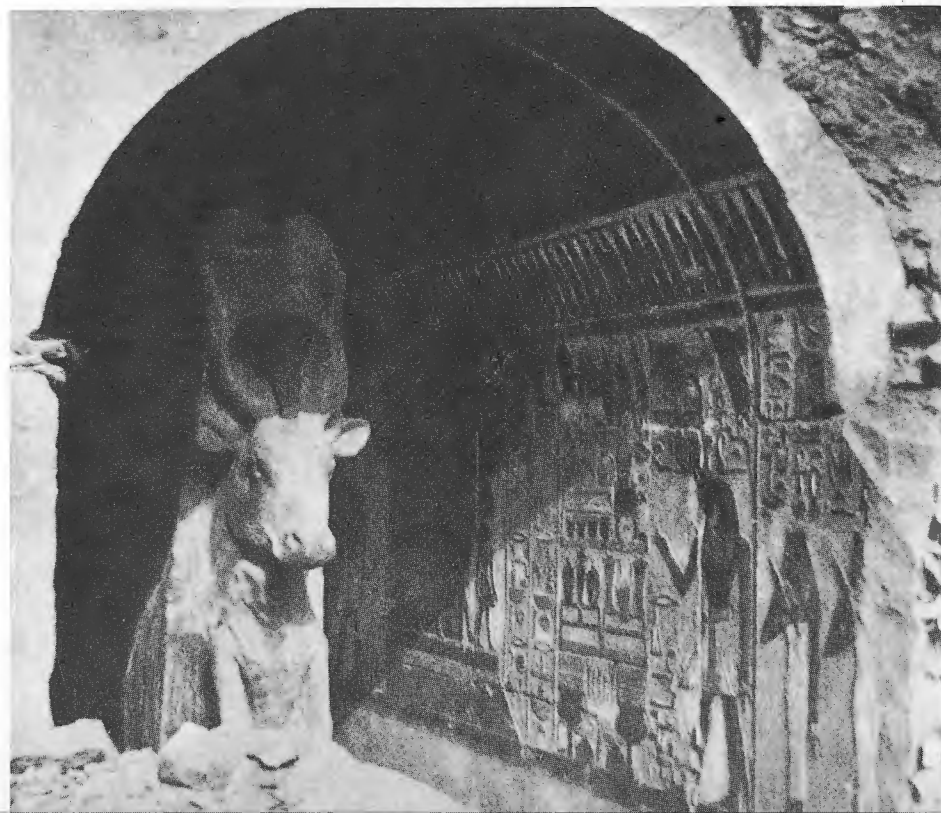


Plate 53. Columns and recesses in the court of the third terrace at Deir el Bahari.

Hathor's cow stood in one room while the boat-sled for its transport was in the other, which was accordingly assimilated to the bark-chapel, as deduced from its wall scenes.

The third uppermost terrace, accessible through an axial ramp, features a third double portico with a front row of square pillars against which stood large stylized statues of Hatshepsut in the garb of Osiris which formed Osiride pillars and a rear row of columns. This portico is the façade of the temple proper which consists of a large hypostyle hall³⁷² set transversely (pl. 53) and accessible through a granite doorway (usurped by Thutmose III) and a sanctuary opposite it cut deep in the mountain. Two lateral doorways open from the hypostyle north onto the altar court of Re-Horakhty and south to the mortuary suite with a chapel for the queen and a smaller one for her father Thutmose I. Traces of an inscription on the doorway to the chapel of Re' read "Amun is holy in the horizon."³⁷³ The central doorway to the upper terrace had foundation deposits of beautiful, well-preserved models of tools provided by Thutmose III.³⁷⁴ The ceiling of the queen's chapel is decorated with the usual astronomical scenes of the hours of the day and the night, while on the walls are represented processions of offering-bearers. The extensive and comprehensive use of architectural statuary in this temple is noteworthy. It has already been pointed out that the architect bordered both the causeway from the gate to the temple-court and the alley in the latter with granite sphinxes. He had also erected two standing Osiride colossi representing the queen bearded, abutting on either end of the lowest portico (fig. 178), and a whole

178. Reconstruction of an Osiride statue of Hatshepsut at the southeast end of the lowest portico of the mortuary temple.



row of Osiride colossi carved from the courses of masonry as a front to the upper portico. In addition, ten tall niches in the rear wall of the upper peristyle court had contained statues of the queen. A unique feature in the chapel consisted of four statues, set as two pairs against the east and west walls of the sanctuary, flanking both doorways. It seems as if the huge statues, double life-size, were to guard the sacred bark of Amun-Re' in its sanctuary during the annual visit of that god at the time of the "Feast of the Valley."³⁷⁵ It is noteworthy that there were 28 statues of Hatshepsut in hard stone, more than 100 statues of sphinxes in painted sandstone, 22 granite sphinxes, and about 40 limestone Osiride figures.³⁷⁶

The technique of portraiture of the pink heads of the four huge statues, showing long narrow faces, seems to have still been influenced by the traditions that preceded those of Hatshepsut's sculptors. Later statues are characterized by round faces with receding chins and high-bridged noses.³⁷⁷

The temple as an architectural achievement bears testimony to the genius of the architect, Senmut. Although the aesthetic factor as an intentional element in the design has occasionally not been acknowledged by some non-specialist,³⁷⁸ there is no doubt that the project was an artistic success mainly because of the entire novelty of the stepped broad terraces in a temple abutting on the cliffs and aesthetically related to them, the extreme and refined simplicity of the porticoes with their varied treatment (polygonal columns, square pillars, Osiride pillars), the sculptured balustrades of both ramps, and the palace-façade plinth surmounted by the panels and falcons on the south retaining wall. The axiality of the general layout and its openness, not only in plan but also in perspective, enhanced by the ramps ascending in the middle of the horizontal stretches of porticoes, as well as the axiality of the secondary structures (chapels of Anubis, of Hathor), surpasses in effect that of the nearby temple of Mentuhotep with its complex of pyramid and terraces. Rhythm is everywhere, allied to exactness and harmony in the proportions. This temple can surely be regarded as one of the best examples of classicism in Egyptian architecture.³⁷⁹ There is clear unity in the design, allied to a feeling of openness and variation with the use of pillars, columns and Osiride statues.

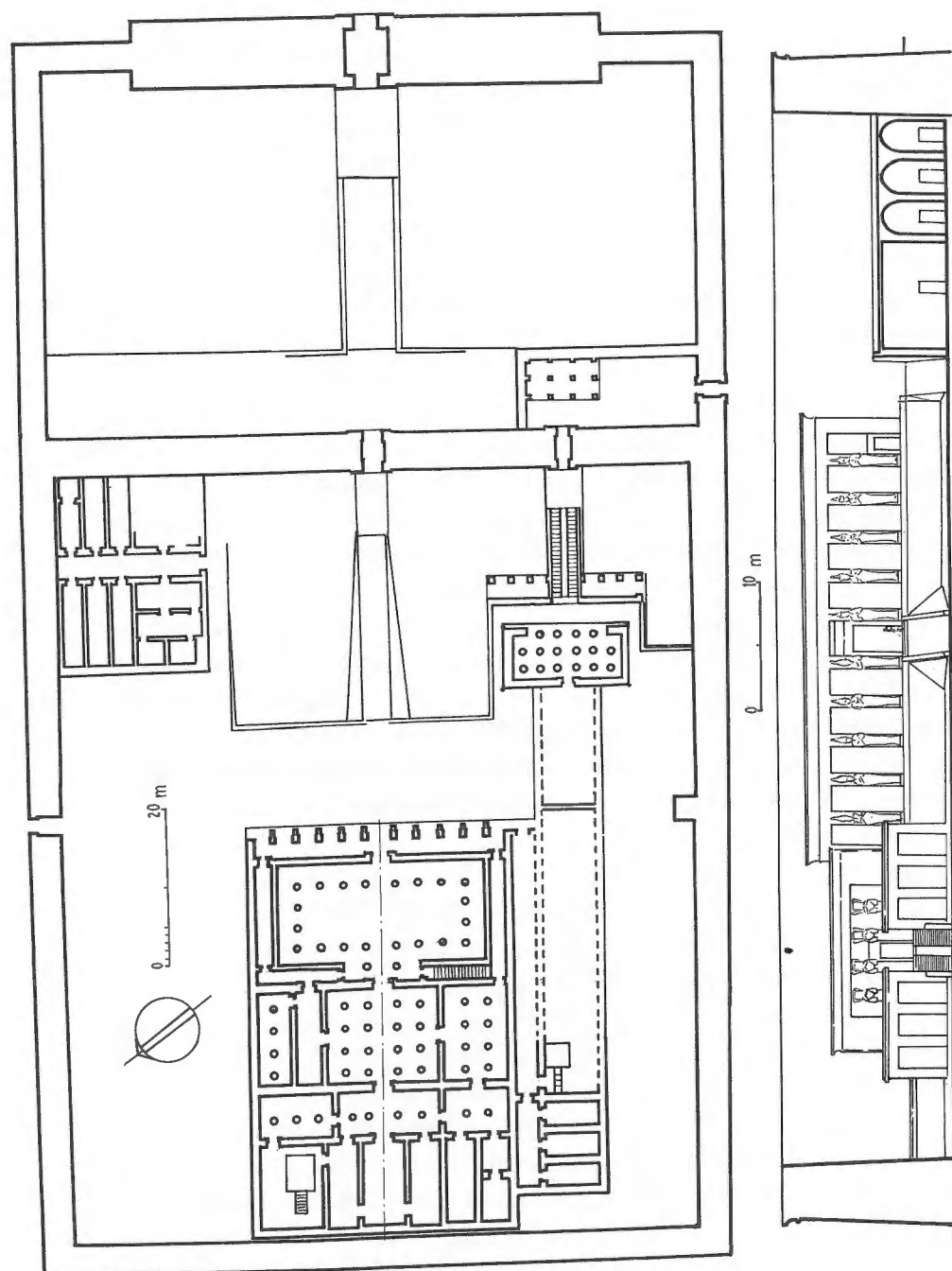
The verticality characterizing the architectural design of the Egyptian temple is emphasized here by the terraced layout carried to its dramatic climax at the rear of the upper terrace where the surging movement to heaven is bent upward by the cliff of the mountain.³⁸⁰ It is a momentous masterpiece where

man-made architecture reaches in symbolism and beauty that supreme architecture of nature.

THE TEMPLE OF THUTMOSE III AT DEIR EL BAHARI.³⁸¹ Recent excavations have uncovered a temple built by Thutmose III above the upper terrace of that of Hatshepsut, behind her chapel for Hathor. A ramp rose to it. Much of the structure stood on a platform of fill but its northern part built on rock and its chapel (so-called grotto) of Hathor, just north of, and above the mortuary temple of Mentuhotep are extant. The Hathor chapel, "Holy Luminous-Mountain-Horizon" (*Djeser Akhet*) has been known for a long time and was transported to the Cairo Museum, together with its cult statue, the Hathor cow in natural size. The name seems to have been applied to the whole complex.

THE MORTUARY TEMPLE OF THUTMOSE III (*Henqet ankh*).³⁸² This was built as the second structure in the series of royal mortuary temples from the New Kingdom at Dra' abul Naga, after that of Amenhotep I. It lies on the edge of cultivation 400 meters south of the ramp from the Eleventh-Dynasty temple at Deir el Bahari.

A brick enclosure wall (80 x 100 m.) surrounds the grounds, the east area being an empty court separated by a transverse wall from the temple area itself, at a higher level (2.75 m.). The temple is laid out axially at the rear of the second court, accessible through a second ramp and abutting on the rear side of the enclosure wall. It is rectangular in plan (33.6 x 50.92 m. = 64 x 97 cubits) and seems to have consisted of five transverse parts, one beyond the other. A portico with Osiride pillars forms the façade, behind which is a court surrounded by a columned portico, a square hypostyle hall, a small transverse hypostyle hall, and the Amun sanctuary. The sanctuary is a rectangular vaulted room flanked by two side rooms communicating with it, probably the sanctuaries of Mut and Khonsu (fig. 179). To the north, as is usual in the typical New Kingdom mortuary temple, is the altar court fronted by a columned vestibule. The mortuary rooms balancing this court on the opposite side (S.) of the central sanctuary consist of a columned vestibule with three rooms. The structure seems to have been entirely of stone, with fluted columns and corbel vaults, decorated with scenes of astronomy in the mortuary chapel. At the back of the mortuary chapel there was once a granite false-door of the same type as that of Thutmose I at Deir el Bahari and dedicated to Thutmose



179. Restored plan and elevation of the mortuary temple of Thutmose III at Sheikh 'Abd el Gurna.

III. In the northeast corner of the second court, magazines of the usual type flank a central alley.

To the south of the temple are various dependencies (magazines with altar) and the remains of a Hathor temple with Hathoric columns. Abutting against the south side of the enclosure wall are remains of priests' houses (Nineteenth Dynasty) of the 'Amarna type.

THE TEMPLE OF AMENHOTEP II.³⁸³ From the mortuary temple of Amenhotep II nothing but scanty remains is known. A court (140 x 120 ft. [42.67 x 36.58 m.]) bordered on four sides by a columned portico and presumably preceded by a front portico (W.) with a row of Osiride pillars and a second of columns are the only recognizable elements of the plan.

THE MORTUARY TEMPLE OF AMENHOTEP III.³⁸⁴ Nothing can be derived from the scanty remains of the temple "House-of-Amun-on-the-West-of-Thebes." It must have been an extensive structure, well in front of the row of mortuary temples, on the evidence of the two colossal seated statues of Pharaoh which fronted it and which still exist, facing east. They are of conglomerate from the sandstone mountains behind Edfu and represent Pharaoh seated (64 ft. [19.50 m.]; originally 69 ft. [21.03 m.] high). To the left of the figure of the northern colossus is his mother Mutemuya and to his right his wife Tiy. On the sides of the throne are sunk low reliefs of the Nile genii binding the symbolic sedge and papyrus plants. The upper part of this colossus, which had fallen to the ground during the earthquake of A.D. 27, emitted a musical sound when the stone was heated by the early rays of the sunrise. It was recognized as Memnon who greeted his mother Eos at dawn. Innumerable Greek and Latin texts were inscribed by the visitors³⁸⁵ (pl. 54). The southern colossus was named "Ruler of Rulers" and had its own priests.

Fragments of sculpture were retrieved, some of which could be restored as the huge limestone-statuary-group (6.40 m.) of Amenhotep III, Tiy, and three daughters (now in the Cairo Museum). It is assumed on this evidence that "the temple formed a culminating point in the taste for ostentatious building"³⁸⁶ at that time. It may well have been, according to the pharaoh's own inscriptions. He boasts it was built with the help of Libyan prisoners (see



Plate 54. The so-called Memnon colossi: statues of Amenhotep III which fronted his mortuary temple in Western Thebes.

p. 159), and on a stela later usurped by Merneptah he describes

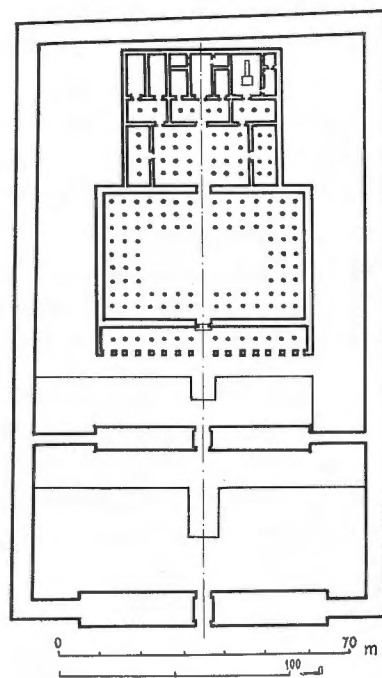
an everlasting fortress of sandstone, embellished with gold throughout, its floor shining with silver and all its doorways with electrum. It is wide and very long, adorned for eternity, and made festive with this exceptionally large stele. It is extended with royal statues of granite, of quartzite and of precious stones, fashioned to last forever. They are higher than the rising of the heavens; their rays are in men's faces like the rising sun. . . . Its workshops are filled with male and female slaves, the children of chieftains of all the countries which my majesty conquered. Its magazines have stored up uncountable riches. It is surrounded by villages of Syrians, peopled with children of chieftains; its cattle are like the sands of the shore, totalling millions.

THE MORTUARY TEMPLE OF THUTMOSE IV.³⁸⁷ The importance of the mortuary temple of Thutmose for the study of this type of structure lies in the fact that it uses the plan of the Eighteenth Dynasty type with additional elements, and served subsequently as a model for the temples built by Amenhotep II, such as his mortuary temple and the temple at Luxor.³⁸⁸

The plan is similar to that of Thutmose III, laid out symmetrically: a shallow court and two pylons precede the temple itself (fig. 180). A double portico with one row of pillars and a second row of columns (cf. the temple of Hatshepsut and the later temple of Amenhotep II) forms the frontage of the great court, surrounded by a portico with two or three rows of columns. The hypostyle hall is followed by a shallow transverse hall, presumably backed by the same compound as that of Thutmose III: sanctuary, altar court, and lateral shrines.

THE MORTUARY TEMPLE OF AY-HOREMHEB.³⁸⁹ The temple belongs to two reigns. The temple proper, with small courts in front of it, was built by Ay,

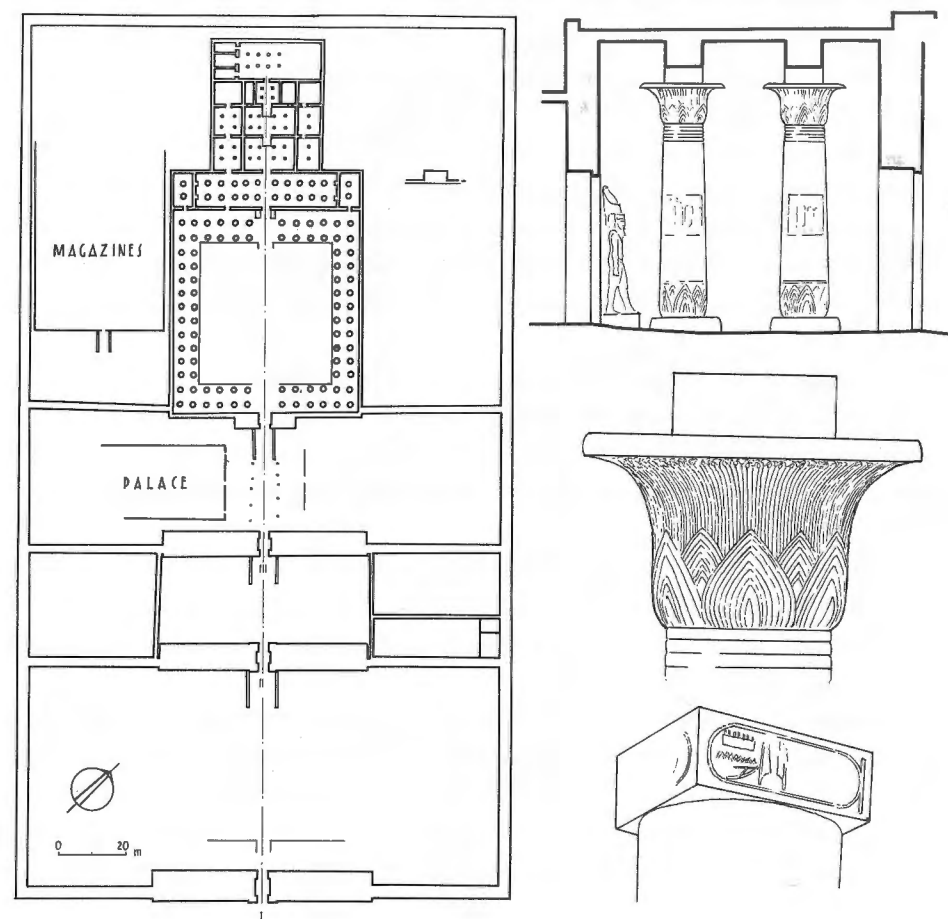
180. Restored plan of the mortuary temple of Thutmose IV.



and the rear additions were by Horemheb, who usurped the temple by erasing the name of his predecessor and replacing it with his own.

The plan is strictly symmetrical, laid out with its axis toward the temple of Luxor, on slanting ground (8 m. higher at the rear). It was built of sandstone while the dependencies and surrounding walls were of brick. The temple as built by Ay consists of a broad transverse hall, slightly projecting from the rectangular outline at both ends, two transverse similar halls, each flanked on both ends by a room, and at the back a sanctuary (fig. 181).

181. Plan of the mortuary temple of Ay-Horemheb at Medinet Habu, section of the large hypostyle hall and detail of its column, and capital from the rear hall of Horemheb.



The broad hall (42 x 10.5 m. = 80 x 20 cubits) had two rows of ten open papyriform columns each, perhaps with antae pilasters. The columns are elegant, with the three arrises of the papyrus stem indicated slightly, painted white, and topped with a delicately decorated capital. Two large standing statues of Pharaoh were set on both sides of the rear doorway. It is noteworthy that the central pathway and a secondary one on the axis of the south doorway to the south apartments have determined a wider spacing in the columns bordering them.

Two hypostyle halls, quite similar in plan, are laid out one behind the other on two levels and connected by axial stairways. Each has eight columns of the twelve-stemmed cluster type with closed capital (1.1 m. diam.). To the north of each hypostyle hall is a room with two central columns, perhaps the private apartments of the god, connected to the group of rooms added by Horemheb at the back of the temple. To the south of each hypostyle hall is a room wider than the one to the north, having four columns and probably used as a mortuary chapel.

The court in front of the temple was enlarged by Horemheb into an extensive area (59 x 54.4 m.), surrounded by a portico with two rows of eight-stemmed papyrus-cluster columns (1.8 m. diam.). These were later ransacked and probably used in the colonnade of the temple of Khonsu (Herihor, Twenty-First Dynasty) at Karnak. A pylon (IV) forms the entrance to the court.

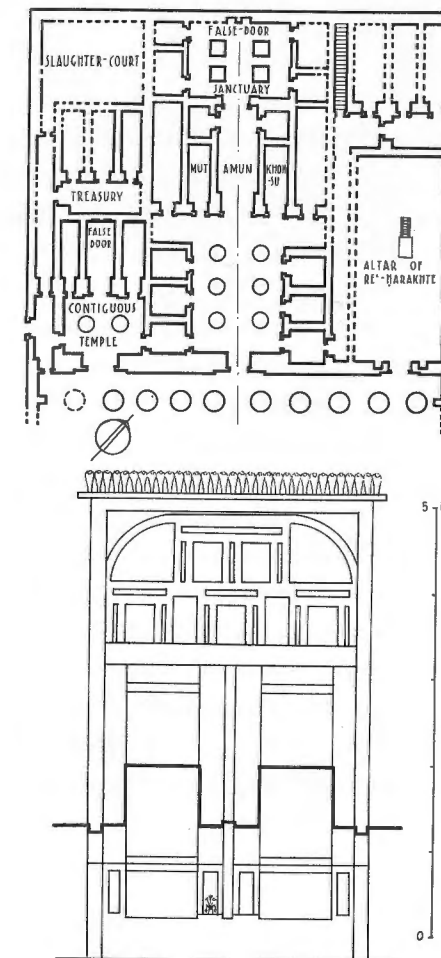
A huge temenos brick wall (257.7 x 145.5 m.) surrounded the temple and its dependencies (storehouses), and the area in front of the temple is divided into three transverse courts by walls, each with a pylon (I, II, III) in its middle part. It is in the westernmost of these courts (III) that the temple palace stood to the south of a wooden portico.

The style of the temple is refined and simple, as is shown by the remains of the fine columns, delicate wall reliefs, and numerous statues that once stood in the temple. This high standard deteriorated in the buildings of Horemheb.

THE MORTUARY TEMPLE OF SETI I (QURNA).³⁹⁰ This is the best preserved of the Theban mortuary temples. The plan is divided into three longitudinal sections, the central one on the longitudinal axis flanked by another on either side. Behind two square courts with two pylons a portico of cluster papyriform columns with bud capitals and antae pilasters stretches transversely along the

whole width of the temple. The central section along the axis consists of a hypostyle hall with six bud papyriform columns, bordered on each side by three contiguous rooms, the one to the southwest containing the bark of Seti I. It is surmised by Arnold that the hypostyle coupled the functions of both an "appearance hall" (so described in its inscriptions) and an offering hall. Beyond the hypostyle hall is a transverse section consisting of the central chapel for the bark of Amun flanked by that of Mut (S.) and that of Khonsu (N.). The functions are identified from the wall scenes representing Seti I anointing Amun and the lion-headed Mut, censuring Amun and Khonsu, and the presentation of unguent before the bark of Mut and incense before that of Khonsu. The rear transverse section is the chapel for the cult on festive days perhaps carried out only in front of its false-door without cult statue (fig. 182).

182. Plan of the mortuary temple of Seti I, and double false-door in the sanctuary.



The section to the right (N.) is the one dedicated to the sun, as is obvious from the large court containing an altar of Re'Harakhty, also accessible from the court.

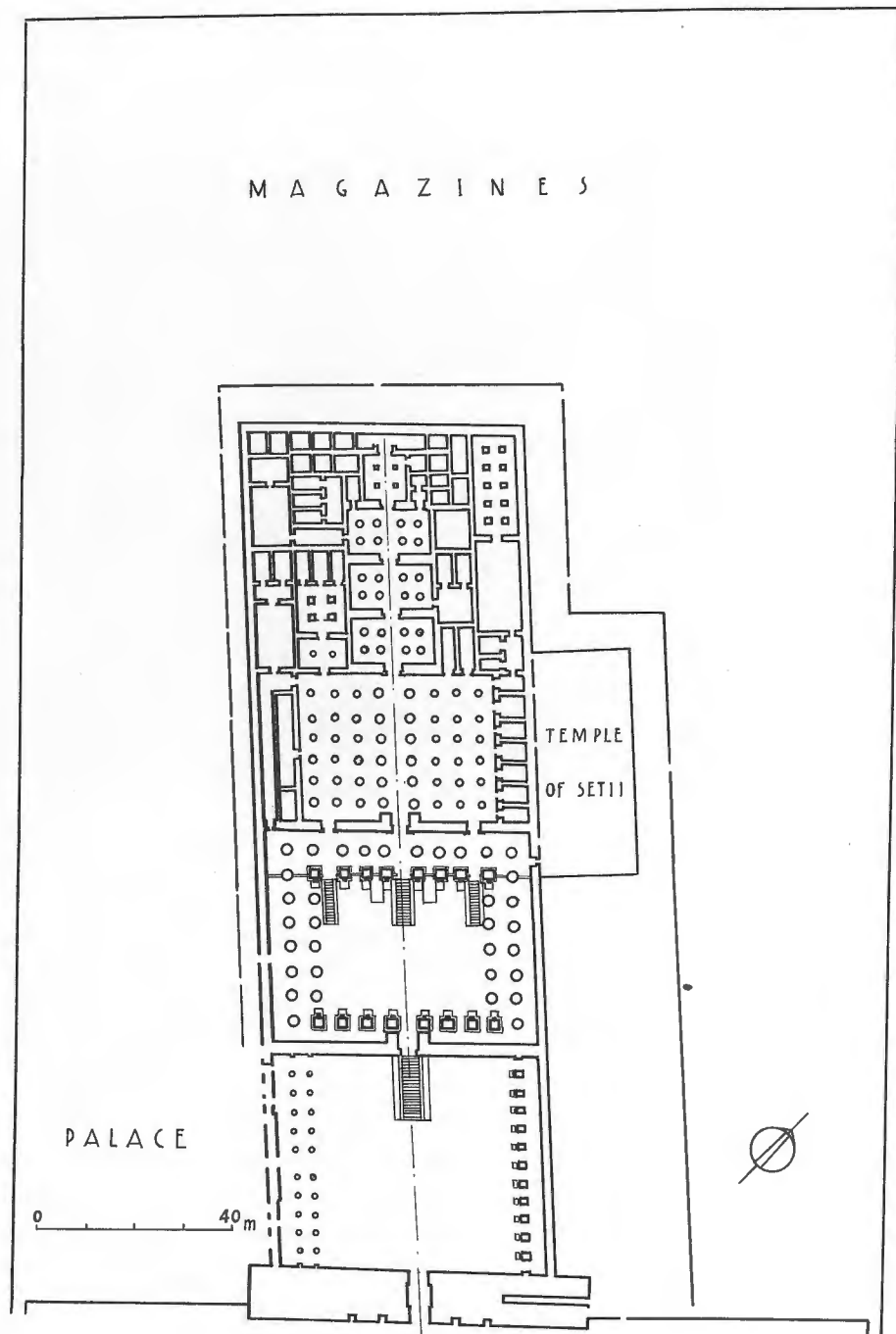
To the left (S.) is the real mortuary chapel, called "contiguous temple," dedicated to Ramses I, father of Seti I. In the temple of Hatshepsut at Deir el Bahari the deceased father Thutmose I partook of the funerary cult, and in the mortuary temple of Ramses III at Medinet Habu there is a cult chamber dedicated to Ramses II. This section consists of a central chapel with two bud papyriform columns at the rear of which are three contiguous rooms, the central one or "offering chapel" being larger and having a double false-door in its rear wall. According to the wall scenes it contained a statue of Ramses I. A scene on the door represents the Osiris coffin of Pharaoh upon which sits Isis as a falcon. A second group of three rooms, finished by Ramses, was dedicated to this Pharaoh and his father Seti. The area at the rear probably served as treasury and slaughter court.

THE MORTUARY TEMPLE OF RAMSES II (RAMESSEUM).³⁹¹ The layout of the whole complex comprising temple, magazines (see pp. 141-143), and palace is analogous to that of the earlier adjacent small temple of Seti I. The large temple was built abutting on the small one but the front pylon forming its façade was set somewhat askew, probably to face the temple at Luxor. Consequently, the various rooms of the plan were not orthogonal. The temenos wall, however, was on a rectangular plan (870 x 580 ft. [265.18 x 176.78 m.]) (pl. 55). The irregular plan of the complex stemmed from two religious considerations: the wish to leave the earlier temple of Seti untouched and the orientation of the façade toward the Luxor temple.

The general plan is a long parallelogram (N.W.-S.E.), with two courts preceding the temple proper (fig. 183). The first court, fronted by a huge pylon with scenes of the battle of Qadesh, serves for the temple palace adjoining it to the south and also for the temple. It is bordered on the south side by two rows of small columns and antae, behind which opens the window of appearance of the palace, and opposite on the north by a row of Osiride pillars. A stairway leads up to the second court, the actual forecourt to the temple, bordered on the shorter sides by double rows of bud columns and on the longer sides by a row of Osiride pillars (pl. 56). At the rear the Osiride pillars and the row of columns running behind are erected on a platform to which



Plate 55. Bird's-eye view of the mortuary temple of Ramses II (Ramesseum) as seen from the back (west).



183. Plan of the mortuary temple of Ramses II (Ramesseum).



Plate 56. Eastern row of Osiride pillars in the second court of the Ramesseum (northeast corner).

three stairways ascend from the court. To the south of the court was a cruciform lake. The large hypostyle hall, probably the "hall of appearance" behind the second court, is akin to a basilican structure: a central nave bordered by a row of six large open papyriform columns (pls. 57, 58) is flanked on either side by an aisle with three rows of smaller bud papyriform columns, bordered by a series of seven contiguous shrines on a higher floor. Later, a corridor was cut in the south row of chapels. On the walls are war scenes such as the attack on the Hittite fortress of Dapur (E.), and a procession of the sons of Ramses II on the dado (W.).

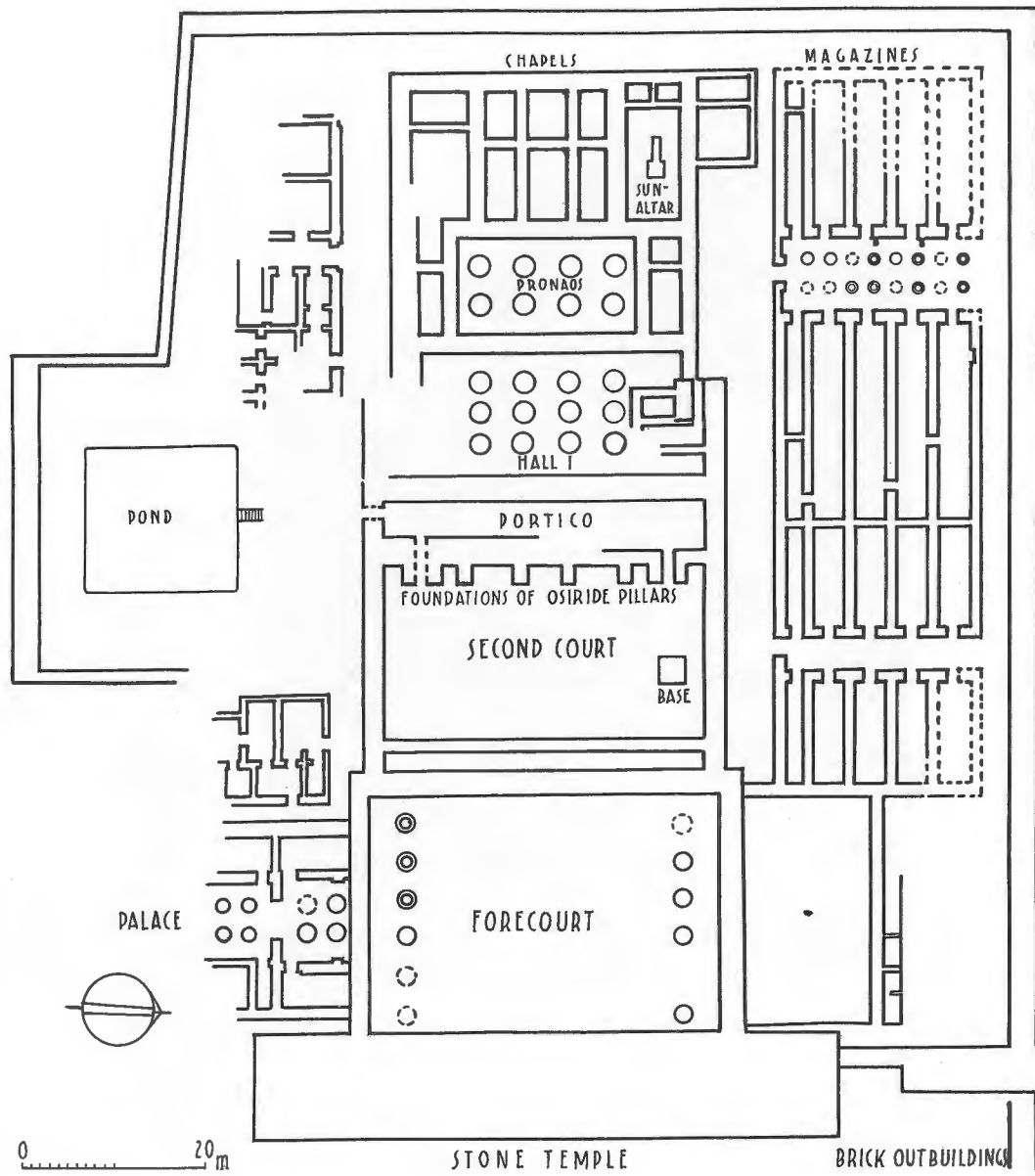
The part of the temple beyond is divided longitudinally into five sections, instead of the usual three. The central one consists of three similar broad halls, each with eight bud papyriform columns, preceding the pillared hall of the bark of Amun and the transverse sanctuary. The scenes representing the procession of the barks, which form part of the themes of the hypostyle hall, were carved in the small columned hall beyond it, which became thus a "hall of appearance," as was done also at Derr and Abu Simbel (temple of Re'Horakhty). The barks of Amun, Mut, and Khonsu, each decorated with the head of its god, are carried by the priests (E.). Part of the coronation themes is shown in the scene of Ramses II seated beneath the sacred persea tree (*ished*) of Heliopolis, on whose leaves Atum writes his titulary. The central blocks of the ceiling show astronomical representations of the seasons, months, circum-polar constellations, and Pharaoh before the gods. The second small columned hall is identified as the "offering-table hall" from the scenes of offering to Ptah and Re'Horakhty on its walls.

To the north of the second and third broad columned halls are two groups of two contiguous rooms each. The front rooms opening on the large hypostyle have wide doorways originally decorated with metal sheets. They were intended as chapels for the barks, one of which was probably dedicated to Pharaoh. The outer northern section consists of a vestibule with two side chambers, a court, probably with an altar to Re'Horakhty, and a pillared hall.

The section to the left (S.) consists of the "contiguous temple": a vestibule with two columns and a four-pillared hall with three cellae at the rear. A wooden screen with a door had been set in grooves between the first pair of pillars. The importance of this contiguous temple is proved by the larger intercolumniation between the columns in its axis in the great hypostyle hall to allow for the processional pathway.



Plate 57. Central nave in the hypostyle hall of the mortuary temple of Ramses II.



184. Plan of the mortuary temple of Merneptah in Western Thebes.



Plate 58. Rows of bud columns in the south aisle of the hypostyle hall (mortuary temple of Ramses II).

The outer section (S.) has two courts, each with two rear rooms, perhaps service rooms and a slaughter court. The treasury seems to be located in a group of a vestibule and three adjacent rooms behind the contiguous temple.

THE MORTUARY TEMPLE OF MERNEPTAH (MEDINET HABU).³⁹² The temple was built in stone with materials from the temple of Amenhotep III. Its plan, similar to that of the temple of Ramses II (Ramesseum), on a smaller scale, could only be surmised from foundation-trenches and pits (208 x 37 ft.; 13 ft. deep [63.40 x 11.28 m.; 3.96 m. deep] for the pylon). The forecourt had six columns on either side (fig. 184). For the second court nothing definite could be said except that a row of Osiride pillars formed the rear side, with perhaps a row of columns on the front side. The portico behind the Osiride pillars is axial with the square pond excavated to the south of the temple. A doorway at the south end of the portico leads to the stairway of the pond. A similar pond, though on a cruciform plan, existed south of the mortuary temple of Ramses II, to the north of its palace.

Two hypostyle halls precede the three contiguous two-roomed sanctuaries. A sun altar forms the central element of a long rectangular court north of the sanctuaries and it has a ramp rising, as usual, from the west.

The outbuildings are of brickwork and consist of two series of long, narrow magazines (N.), each with a central hall. The western hall has two rows of columns (68 in. [1.73 m.] diam.) supporting architraves out of which spring the vaults of the roof (at least three courses thick, 28 in. [0.71 m.]). Each group of magazines had a stairway ascending to the terrace. To the south the remains are most probably those of the temple palace.³⁹³

THE MORTUARY TEMPLE OF RAMSES III NAMED "UNITED-WITH-ETERNITY" (MEDINET HABU).³⁹⁴ The importance of this temple extended far beyond its religious significance into domestic and military architecture. The settlement of thousands of war prisoners around the temple and its magazines (see pp. 142-147) within a huge brick temenos formed a city (see pp. 462-470) which was inhabited continuously, even after the temple, then known as "The Mansion," had dwindled as the center of the administration of the Theban necropolis with its own mayor (end of the Twentieth Dynasty), and later through the Greco-Roman and Coptic periods when it formed the town of Djimē.

The temple, the only one from the Twentieth Dynasty, built of sandstone, stands in its great brick temenos (313.94 x 209.70 m.) abutting against

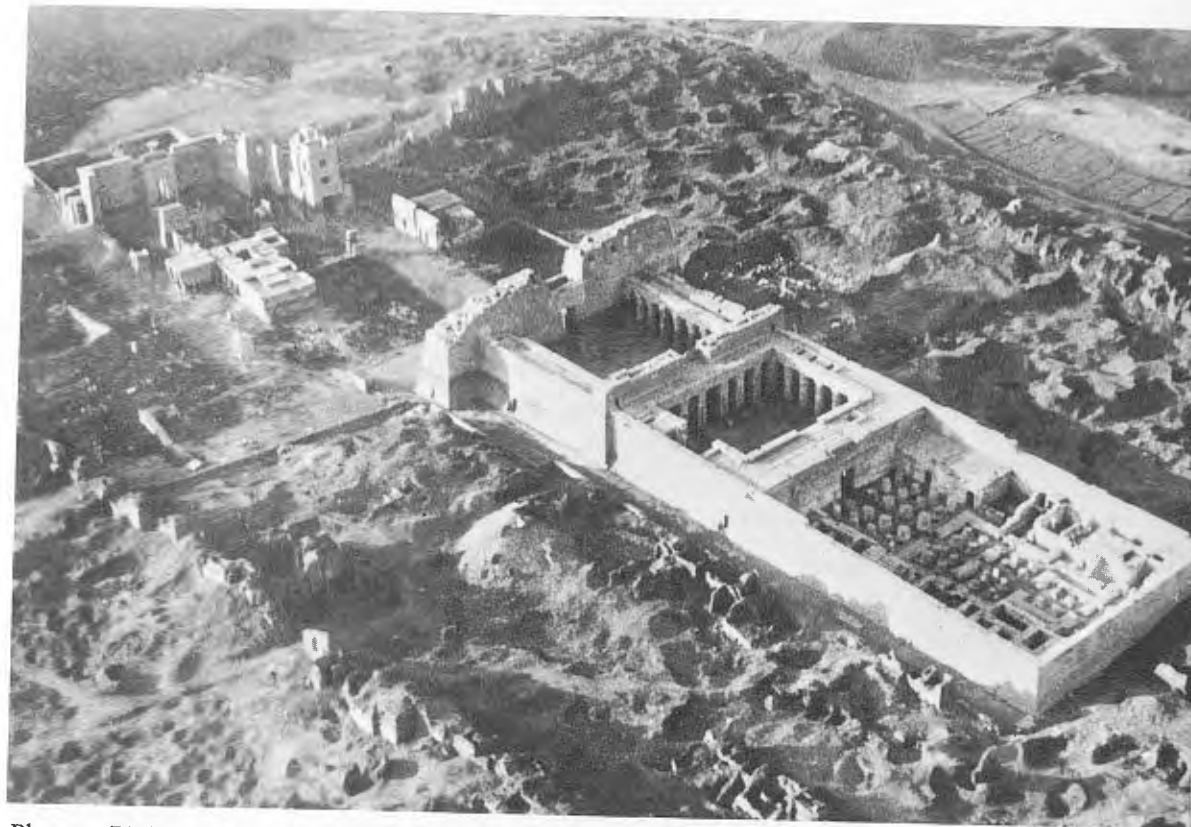
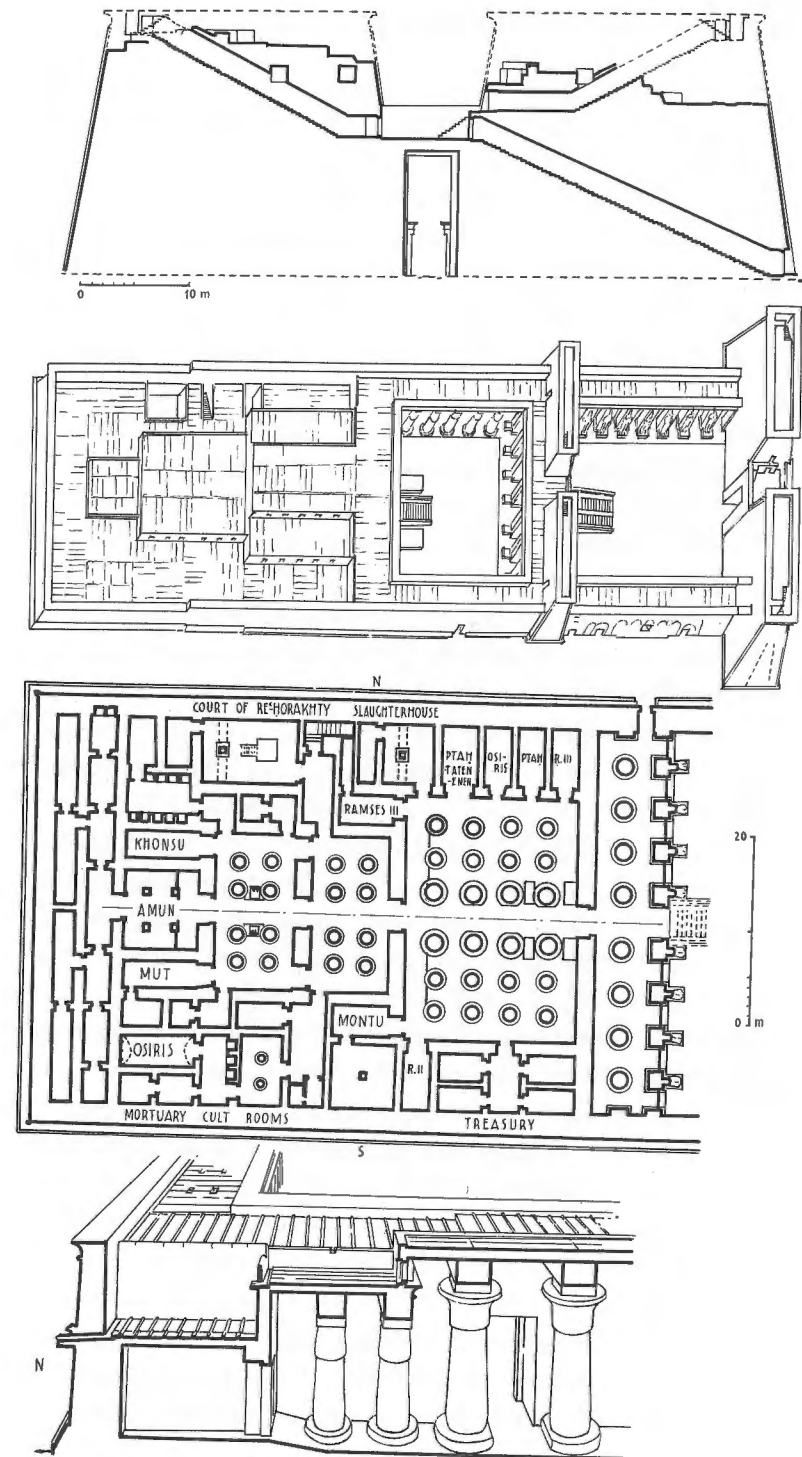


Plate 59. Bird's-eye view of the mortuary temple of Ramses III at Medinet Habu, as seen from the north. In the background, the small temple of the Eighteenth Dynasty and the eastern gateway.

that of the temple of Ay-Horemheb (pl. 59), accessible through its east and west gates of a military character (see pp. 463-470). Although the top of the walls was not manned by any regular garrison, the girdle wall could withstand the attacks from the desert marauders. A low crenellated wall surrounded the temenos. A quay in the axis of the temple formed the approach from the basin at the end of a canal. The town life with its thousands of artisans and priests burst to feverish activity during the beautiful Feast of the Valley when the bark of Amun came on visit from Karnak and Pharaoh resided in his temple palace. The temple was accessible to the people, however, for on the south wall of the passage in the gateway a figure of Ptah with hair and beard inlaid in blue faïence is certainly "Ptah of the Great Gate," one of the sacred figures that appealed so much to popular worship. He is called in the accompanying inscription: "Ptah the Great, South of his Wall, Lord of Life of the Two Lands, the Great God, who hears prayers, who is in the House of Millions of Years, 'United-with-Eternity' in the Estate of Amun."³⁹⁵

The temple itself formed the center of the layout, within its inner enclosure wall which abuts on its huge pylon (fig. 185). The latter is a massive structure (66.9 x 11.1 m.), once presumably 24.45 meters high, with two flag-staffs, about 32-36 meters high, set in recesses in the battered front façade on either side of the portal. This portal (3.9 x 10.8 m. internally) was to be closed by a two-leaved door and an immense one-leaf door (4.45 x 11.05 m.) that turned back into a recessed panel decorated as usual with insignificant patterns. Later, a second door with two leaves was set in the western bay by the pharaoh and high priest Pinedjem I (Twenty-First Dynasty). A staircase starting from the north side of the pylon rises in a narrow passage (0.9 x 1.8 m. high) in two flights, connected above the portal by an open terrace and issuing upon the terrace of the south tower. A second flight rises from the portal to the top of the northern terrace. The walls of the corridor are carved with the royal titulary on a gigantic scale, and the sun hymns inscribed on the walls of the portal-terrace lend weight to the assumption that the sun was regularly observed or worshiped from it or from the top terrace.

The similarity between the plan of this temple and that of Ramses II (Ramesseum) is obvious, particularly in the layout of the two courts. The first court is bordered on the south side by one row (two rows in the Ramesseum) of eight thick papyrus columns forming a portico in front of the temple palace, and on the north side by seven Osiride pillars (9.8 m. high). Here the



185. Mortuary temple of Ramses III at Medinet Habu: section of the great pylon, restored isometric view of the temple, plan and transverse section of the great hypostyle hall.

massive statues have become a functional part of the architectural design. The pylon and the façade of the temple palace are covered with war and hunt scenes.

A second pylon, analogous to the first one but smaller, stands in front of the second court to which a ramp and a granite portal lead. The second court resembles also the corresponding one in the Ramesseum: a row of bud papyri-form columns, whose smooth shafts are decorated with reliefs, borders each of the east and west sides, that of the west wing being set on a platform (1.2 m. high), topped with a cavetto cornice and doubled with papyri-form columns with antae. Later Ramses III fixed screens of stone slabs (2.38 m. high, 0.38 m. thick), decorated externally with low reliefs, between the Osiride pillars. A wide ramp with low steps rises to the central bay of this portico and it is flanked on either side by a colossal seated statue of Pharaoh. The lateral service doorways opened in the north and south walls of the second court. Scenes of various feasts such as that of Min (N.) or Sokar (S.), coronation rites (N.W.), and a procession of the royal princes (W. socle) are represented in the mural low reliefs behind the colonnades.

Beyond the portico lies the temple proper. Its central section, strictly symmetrical, consists, as in the Ramesseum, of a great hypostyle hall, two smaller ones, the chapel of the bark, and the sanctuary.

The great hypostyle hall (26.3 x 18.9 m. = 50 x 36 cubits), "of appearance" (cf. the Ramesseum), has two rows of four large, presumably open papyri-form columns (2.2 m. diam.; 9.3 m. high) on the sides of the central nave and two rows of smaller bud papyri-form columns (1.66 m. diam.; 6.95 m. high), four on either side. The roof was higher over the central nave, allowing for clerestory lighting. It is noteworthy that the bases of the columns in the nave have been sliced off toward the axis of the plan to allow for the passage of the sleds (3.1 m. wide; cf. Luxor and elsewhere) that carried the sacred barks.

The sandstone pavement had round and square holes, subsequently patched up, which served presumably for constructional scaffolding. A platform (0.5 m. high) runs along the rear wall and was accessible through a central ramp. The contiguous chapels to the north of the hall are dedicated to Pharaoh, Ptah, Osiris, and Ptah-Tatenen. The chapel of the last-named god contained the bark of Ptah-Sokar. On the south a lateral chapel dedicated to Ramses II contained his statue and its bark, while a group of four rooms, some with stone benches and entered from a common vestibule, served as treasury.

Its door from the hypostyle hall, cut through a wall scene representing Ramses III dedicating precious metalware to the gods, probably shut with a slab carved uniformly with the rest of the scene to conceal its opening. To the north and south ends of the rear wall a chapel, parallel to the longitudinal axis, probably contained a bark dedicated to Montu and to Ramses III.

To the west end of the row of northern chapels a court with a portico on one pillar and a chamber would have served, according to the reliefs on its walls, as a slaughterhouse. It is to be presumed, however, that the joints of meat were only arranged and prepared there, since the restricted area and the lack of drainage facilities would not have allowed for any slaughtering proper. Pharaoh appears in one scene performing the rite of dedication "Striking the meat pieces four times."

The second hypostyle hall (16.8 x 8.4 m. = 32 x 16 cubits), transverse to the main axis, has eight papyri-form columns and a raised platform along its rear wall opening through three doorways to which rise three ramps. From this hall a side-doorway gave access to the north onto the sanctuary of Re'Horakhty and another, to the south, onto the mortuary chapel of Ramses III.

The sanctuary of Re'Horakhty consists of a vestibule with a massive table at the back and two doorways, one to the staircase leading to the terrace and the second to an open court containing the altar. A portico on one pillar stretches at the western end, and a small ramp leads into a room. The steps to the altar rise from the west as in the other similar courts so that the officiating priest might face the rising sun. The low reliefs represent Pharaoh with various heavenly beings and Re'Horakhty and the sun god in his bark.

The mortuary cult-rooms to the south of the second hypostyle hall consist of a front room with a small statue-cella dedicated to Ramses III, a hypostyle hall with two columns, and a transverse room with a bark and three niches for statues or pillars. Beyond this room are two rooms and a larger one dedicated to Osiris. The latter room is conspicuous for its false vault decorated with astronomical scenes (similar to those in the second hypostyle hall in the Ramesseum), and a double false-door with figures of Osiris and Pharaoh on its rear wall.

The third hypostyle hall, identical in form to the second one, but without platform, contained two statuary groups facing each other on both sides of the central alley, between the columns and representing Pharaoh, once with Ma't and the second with Thot. Several chapels to the north are connected with this hall.

The hall of the bark of Amun (four pillars) had a stone screen with a door opened later between the front pillars. The sanctuary at the back is a small transverse room with a double false-door in its rear wall, for the cult of Amun and Pharaoh.

Adjoining the room of Amun are those of Mut and Khonsu on either side, each probably having contained a sacred bark. On both sides of the sanctuary and behind it are small shallow rooms, presumably storerooms for the treasury.

The terraces forming the roof of the temple were at various levels, according to the heights of the halls, and were surrounded by the outer wall rising high above (3.35 m. at the rear; 4.64–4.84 m. in the middle) and decorated with representations of Pharaoh worshiping various deities. Adequate provision for the drainage of rainwater featured large waterspouts in the shape of the forepart of a lion projecting at the top of the external faces.

Although the temple was closely surrounded by outbuildings, leaving only a narrow street around its walls, they were decorated externally with elaborate scenes above a battered socle rising in steps toward the rear to conform to the rise in the levels of the ground.

THE MORTUARY TEMPLE OF RAMSES III AS AN ARCHITECTURAL ACHIEVEMENT.³⁹⁶
The pylons cannot be considered as the façade of the temple proper, but rather as huge gateways embodied in the surrounding walls. At Medinet Habu the first court is integrated for the first time into the structure, its side colonnades being of similar scale to those of the temple (*not* smaller; and of similar scale to those of the palace in the Ramesseum). In the second court, analogous to that of the Ramesseum, the lack of scale between the two colossi (11 m. high) on both sides of the portal of the temple and this portal would have purposely aimed at expressing the power of the divine Pharaoh. This is nothing but a transposition into architecture of the same heroic scale used in graphical representations of Pharaoh.

The gradual rise in the floor levels toward the sanctuary, typical of the cult temple during the Empire, is here more especially emphasized on account of the terrace carrying the temple proper built to the rear of the second court. The variation in room proportions is not due to any intentional artistic program but only to function since the large columns crowding the hypostyle hall would deprive one of any appreciation of the actual size of these rooms.

The purpose of the architect was to provide an adequate wall-area covered with mural representations of the cult ritual in connection with the processions and festivals held there. I would add that the general layout conformed in its proportions to the basic rules of harmonic design.

The massive and colossal monumentality of this temple contrasting with the earlier temples of Seti I and Ramses II is a sign of a rather decadent striving toward impressive power. The "contiguous temple" of the Nineteenth Dynasty is replaced here with an Osirian sanctuary of Pharaoh with narrow rooms and circuitous approach reminiscent of funerary architecture.

The columns have become mere cylinders, tapering and bulging elements without the slightest reminder of the original plant-cluster. They served as an excellent area for decoration, being covered, as were the neighboring walls, with scenes and patterns.

The close connection of architecture and architectural statuary is apparent in the treatment of the Osiride pillars in the second court. Such an integration of sculpture into architecture had been initiated in the Eighteenth Dynasty and in the Ramesside Period. The statues are cut in the masonry of the pillars and could be intended, according to Hölscher, to convey an impression of power through the rather clumsy stylization and the overdevelopment of the upper part in the mummiform or living figures.

The sunk relief, initiated under Seti I and Ramses II, is here deeply cut, with bold modeling,³⁹⁷ probably to follow the same scheme of impressing at a distance. This aim, however, is inadequate for the decoration of small rooms. Color used lavishly on a white background does not emphasize architectural treatment.

The composition of wall scenes on a monumental scale reaches its apex in this temple successfully rendering arrest and movement, achieving depth with effects of perspective, and using only very subdued, often undulating, groundlines. Such are the scenes of hunt in the desert and in the marshes (west face, south tower of Pylon I) in their dynamic realism and even the typical triumph scene of Pharaoh (east face, south tower of Pylon I). Mural decoration is closely adapted to the architecture as in the façade of the temple palace around the window of appearance with its sill carried on a row of heads of prisoners in the round as if lying prostrate on the ground. Faïence tiles of delicate texture and brilliant color depicting bound prisoners or the royal

griffin enliven the stone doorway of the palace. Nor is the propaganda factor so dear to the Ramessids ignored, for Ramses III stands forth in majesty in the scenes on the outer walls.

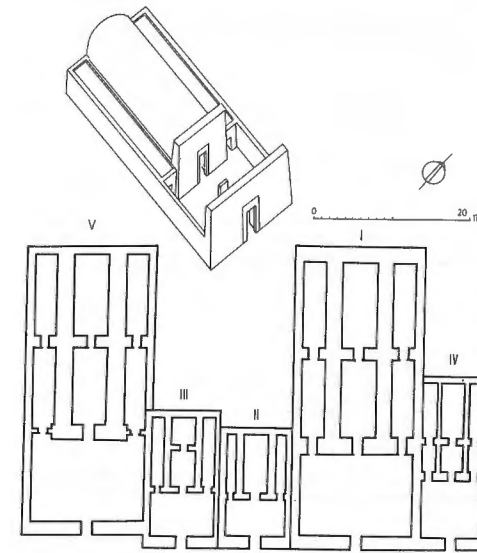
THE PRIVATE MORTUARY CHAPELS

Besides the numerous mortuary chapels erected on the western bank above the tombs of individuals and serving as superstructures to these,³⁹⁸ there were also some private mortuary chapels set independently from the tombs, near the river. They were probably erected through a specific authorization near the mortuary temples of the pharaohs as a special favor. This would have been true of such important personages as Amenhotep son of Hapu under Amenhotep III, or Pesiur and Minmose under Ramses III. One could interpret the building and approach represented in the tomb of Nakhtmin³⁹⁹ as an example of this independent type of mortuary complex, fronted by a garden, a long stairway between the two rows of vessels and shrubs, and an artificial pond. These elements are described by the texts since the Middle Kingdom as the most important features of the mortuary complex. The plan, which consists of a sanctuary set at the rear of a court and flanked with lateral chapels, seems to have formed the standard type of such an independent mortuary chapel for private people (graphical and archaeological evidence).

Typical Examples of Mortuary Chapels for Private People

MEDINET HABU.⁴⁰⁰ Behind the mortuary temple of Ramses III at Medinet Habu are five contiguous chapels, with their façades set on a line, which date from the Twentieth Dynasty. They were apparently in relation with the temple of Ramses III, since they are on its main longitudinal axis. They were destroyed with the gate at the end of the Twentieth Dynasty and restored between the Twenty-Second and Twenty-Fifth dynasties, and shafts were cut from three of the five chapels.

The plan of the smaller chapels (II, III) consists of a forecourt and a central sanctuary flanked by two narrow rooms (fig. 186). Against the rear wall of the sanctuary a brick foundation was perhaps used as a socle for a stela

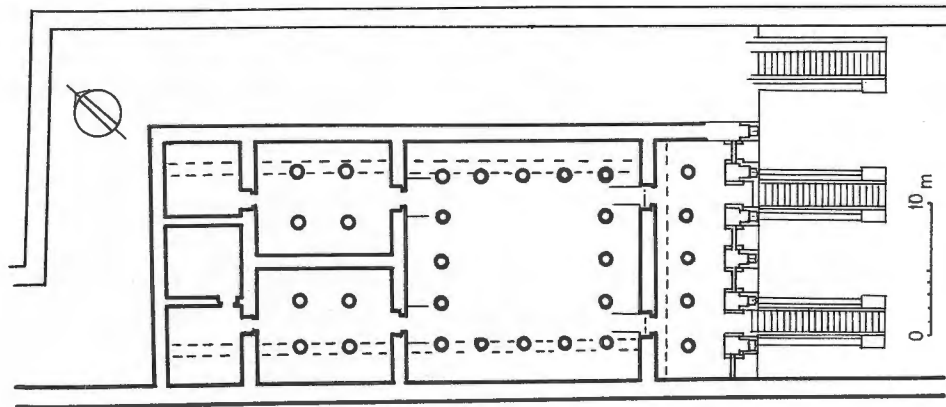


186. Plans of the five mortuary temples of the Twentieth Dynasty behind Medinet Habu and restored isometric view of Chapel V.

or a statue. In the larger chapels (I, IV, V) the plan is similar, but with a second set of three rooms (10.1 m. and 10.55 m. long in I and V) behind the first one (9.5 m. long). It seems likely that the side walls of the rear central room or sanctuary had been lined with sandstone blocks decorated with scenes (Pesiur and Minmose, officials of Ramses III). As the walls of the two central rooms are much thicker than the others it is presumed that they were roofed over with a vault and fronted with a pylon.

The similarity of these private mortuary chapels to the small temple of Hatshepsut at Medinet Habu is obvious.

SMALL DOUBLE TEMPLE OF SETI I (RAMESSEUM).⁴⁰¹ This early structure, which was responsible for the deviation given to the huge temple of Ramses III, was rebuilt by that pharaoh. It was probably a mortuary temple for two relatives of Seti I. The earlier plan featured a court, a hall, and two rear contiguous sanctuaries. The temple, as rebuilt by Ramses II, was more elaborate: two stairways led to a platform with a front portico (five columns and presumably five Osiride pillars); two doorways in the axis of the stairways opened onto a square court bordered by a colonnade in whose rear wall two corresponding doorways each led into a columned hall (four columns), connected at the back with one (right) or two rooms (fig. 187).

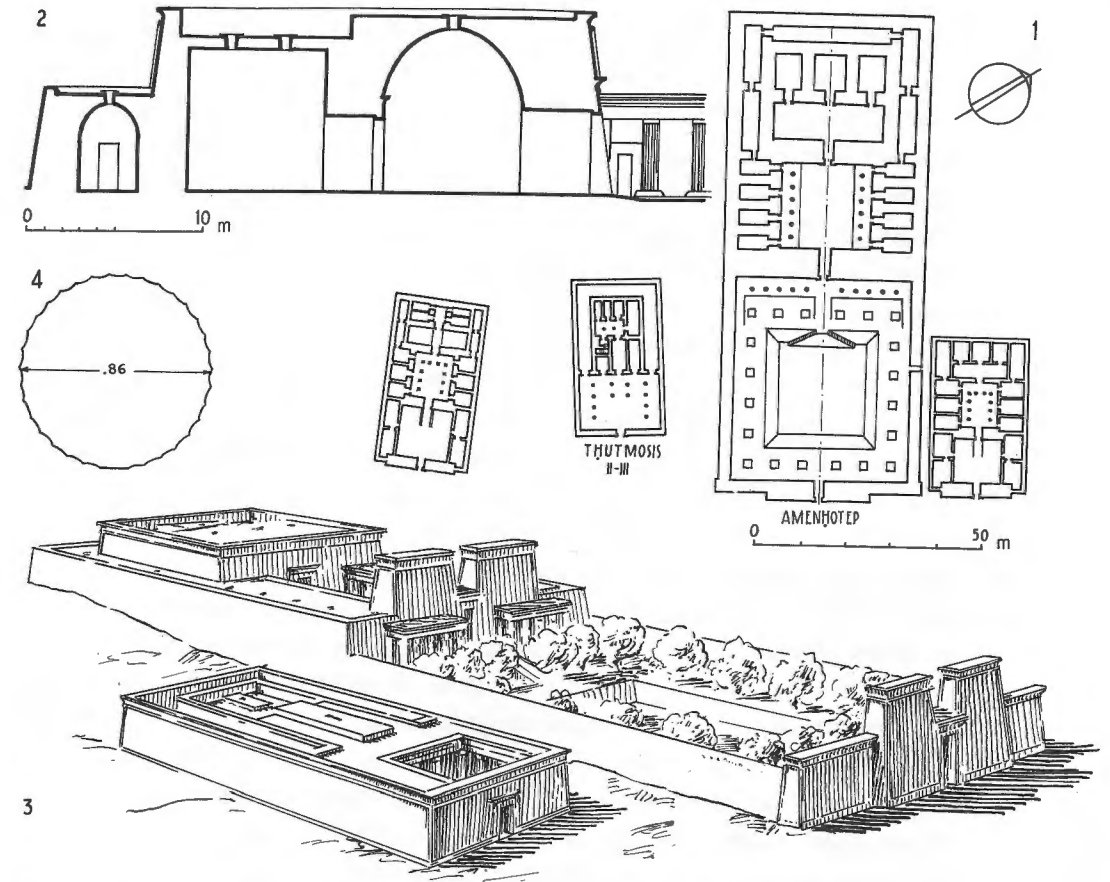


187. The small double temple of Seti I as rebuilt by Ramses II at Medinet Habu.

THE MORTUARY TEMPLE OF AMENHOTEP SON OF HAPU.⁴⁰² To the east of the mortuary temple of Ay and Horemheb at Medinet Habu and to the north of that of Amenhotep III are four mortuary temples in brick, the largest being that of the architect of Amenhotep III, Amenhotep son of Hapu, also called Huy. He began it in Year 31 and was the only private person allowed to build his mortuary temple in the row of the royal temples along the edge of the cultivation in Western Thebes.⁴⁰³ It stands next to the mortuary temple of Thutmose II, enlarged by Thutmose III.

The plan is rectangular (E.-W.) and consists of two sections: a square forecourt and the temple proper (fig. 188). A first pylon fronts the court, planted with a row of twenty trees in square borders of brick around a huge square basin to the bottom of which two stairways descend along the north-west side. A doorway in the north wall leads to the workshops, magazines, and dwellings of the workmen of Amenhotep III. A terrace with a columned portico runs along the rear, forming the bottom part of the façade of the second pylon. Three ramps cut in the rock or built in brick ascend to the terrace.

The outer face of the huge second pylon was probably only whitewashed, while the inner one as well as the walls of the inner court were lined with decorated sandstone blocks. The pavement of the court is of sandstone slabs. A portico of six fluted columns, painted in white with a vertical band of blue hieroglyphs, runs on either side of the court. It fronts four contiguous vaulted



188. Temple of Amenhotep son of Hapu in Western Thebes: 1, plan, with that of the temple of Thutmose II-III and two anonymous ones; 2, longitudinal section in the rear part; 3, bird's-eye view restored of the temples of Amenhotep and Thutmose II-III; 4, cross section of a fluted column from the second court.

chambers, paved in brick and decorated with scenes painted on stucco. Two cellars were built in the court, to be closed with trap doors and concealed under the pavement. From the westernmost room a doorway opens into a series of long rooms surrounding the rear part of the temple. The latter consists of a high façade behind which is a transverse hall and three contiguous chapels, the central one larger and probably lined with stone. Roofing consisted of vaults, painted as were the walls.

This type of sanctuary resembles that of the Twelfth Dynasty temple at Medinet Madi or that of S'ankhkare' Mentuhotep at Qurna.⁴⁰⁴ The thick walls and massive proportions would have been excessive, even in a much larger temple built for a pharaoh. This trend toward the massive and sturdy is obvious in the official buildings that Amenhotep son of Hapu carried out for Amenhotep III at Soleb and in the Mortuary Temple in Western Thebes. Only the two colossi that fronted the latter are still extant. In these examples, we can truly speak of a "personal style." The wise man who began his career as Scribe of the Recruits, worked as Overseer of all the King's works, and as Royal Scribe was revered in later times as a healing saint. Pharaoh Amenhotep III had erected a series of statues of Amenhotep son of Hapu in the temple at Karnak, and they were later addressed as mediators to Amun by the worshippers.⁴⁰⁵

TWO ANONYMOUS TEMPLES, NORTH AND SOUTH OF THE TEMPLE OF AMENHOTEP.⁴⁰⁶ Both these temples are much smaller than that of Amenhotep, directed E.-W. and very similar in plan. This features a tripartite division into a forecourt, a court with portico, and the sanctuaries (see fig. 188). A whitewashed brick pylon forms the eastern façade, beyond which is a square court paved with stone and bordered laterally with two contiguous porticoes. A central ramp ascends to the second court paved with stone and fronted by a second pylon, lined with limestone and bordered on three sides by a portico of columns (north temple) or pillars (south temple). On the north and on the south sides behind the portico are three contiguous rooms, while a ramp leads up to the transverse hall connected to the contiguous chapels (three in the northern and four in the southern temple). On both sides of this rear part there probably was an outer room entered from the last of the rooms bordering the second court. The roof could have been of wood (north temple) or possibly was vaulted (south temple).

THE ACHIEVEMENT OF RELIGIOUS ARCHITECTURE

The bulk of the existing remains in Egypt pertain to religious buildings. The flourishing period of the Empire provided Pharaoh and the priesthood with new means and access to new lands that sent tribute, in kind as materials and

riches, or in ideas as styles and artists, contributing to the glory of the Egyptian gods.

Pharaohs left on the walls of the temples extensive records giving a florid and presumably exaggerated account of their building activity. Nonetheless a glimpse at what must have been the richness of those works in valuable materials which have long ago been looted can be obtained from this literature. The names of the temples indicate that they were living entities created by the pharaohs for the glory of the gods and their personal welfare. Nowhere is the notion of building for eternity so vividly asserted as in these temple inscriptions.

The cult temple, deriving directly from the archaic sanctuary at Abydos through the more elaborate types of the Middle Kingdom, attains its plenitude in this period. Its stone structure succeeds in creating the atmosphere of intimacy and eternity, mingled with religious awe, through the gradual decrease in space and light as one proceeds inward. Axiality in the plan is a general rule, contributing as it did in the rock tombs of the Middle Kingdom, and probably also in the temples of the same period, to an emphasis of the importance of the god's shrine. In fact, every feature points to the presence of the god: the rows of solemn sphinxes guarding the approach to the building and forming the "way-of-the-god," the colossi of the pharaohs and the obelisks flanking both sides of the central portal, the huge masses of the pylons barring from the sacred precincts any intrusive lay speculation, even to the figures of the god himself represented as if coming out from the gate of the pylon, the "Luminous-Mountain-Horizon-of-Heaven" as the sun rises in the East from the mountainous horizon.

The scale is indeed colossal, being an adequate expression of the power of the gods and the gratitude of the pharaohs of the Empire. The whole project is conceived and carried out for gods. Perhaps the most remarkable element featuring this concept is the hypostyle hall, with scores and occasionally hundreds of large stone columns with symbolic implication, carrying a two-level ceiling. Columns and pillars had been used before during the Old and Middle kingdoms, mainly in porticoes and in two rows along the central nave in the halls, but it was during the New Kingdom that the architects erected forests of huge plant-columns, probably complying with some symbolic ideology. Here again the axial pathway is emphasized by being bordered with columns taller than those in the aisles. The large columns are of the papyri-

form type with open capitals, while the other ones have a bundle-shaft with bud-shaped capitals. On account of its concept of a nave higher than the aisles which allowed for clerestory lighting, the hypostyle hall in some of the temples of the New Kingdom is akin to the later basilica, even to be regarded as a possible prototype of the latter. Clerestory windows had been known in Egypt since the Third Dynasty (processional hall in the mortuary temple of Neterikhet Djeser),⁴⁰⁷ but their use to light a basilican hall is not met with before the New Kingdom temples. Vitruvius (VI, III) had noticed the resemblance of these halls to Roman basilicas and it seems hardly questionable that the latter were conceived after the hypostyle hall of a New Kingdom temple, possibly that of the temple of Amun at Karnak,⁴⁰⁸ or the festival hall of Thutmose III at Karnak. It is hardly surprising that the Copts adopted the basilica as their earliest type of church.⁴⁰⁹

This elaborate setting for the god had its climax in the shrouding of the sanctuary in complete darkness, with its small gilt statue placed in the naos and illuminated mysteriously by a beam of light falling from a slot in the ceiling (temple of Ptah at Karnak, small temple of Amun at Medinet Habu).

There is evidence pointing to two contradictory ways of disposing of old temples: either the earliest buildings were razed and their materials reused in the larger new temples, so that they would impregnate the latter with their sanctity; or the temple was rebuilt on the earlier site. Sometimes new buildings were planned about the earlier ones, respecting their layout even to allow for asymmetry. The cult temple of Thutmose III was thus embodied in the forecourt of that of Amun at Luxor, with the result that the forecourt was laid out on a curved axis. Abutting on the temple of Seti I at Medinet Habu the much larger temple of Ramses II was built with its longitudinal axis parallel to the earlier one, but not perpendicular on the front façade and different from that of the enclosure wall of the whole complex. In the layout of the mortuary temple of Ramses III at Medinet Habu the earlier one of Ay-Horemheb was embodied into the brick girdle wall. These unusual examples show the pious respect of the architects for the existing temples, even at the cost of modifying the layout of their new projects. When enlarging a temple, however, the usual method was to preserve the earlier structure, to carry out adequate restorations, and to add in front of its entrance façade a forecourt with a pylon and a large girdle wall. This accretion process is clearly seen in the layout of the great temple of Amun-Re' at Karnak, where no fewer than five pylons with in-

termediate courts of hypostyle halls were added one in front of the other along the longitudinal axis.

Another method of emphasizing the approach to the cult temple, which seems to have been invented by the architects of the New Kingdom, was the erection of columns unconnected by any screen wall to border the processional way in front of the entrance pylon (temple of Amun at Luxor, at Karnak), or even in the forecourt (temple of Mut at Karnak). The device of the screen walls to form a winding entrance is regularly used in the sun temples at 'Amarna. Elsewhere it seems that a porch of stone or wood is used to this effect (temple of Amun at Karnak).

Sun temples are known and differ from the standard cult temple by the absence of covered areas. The plan is a long rectangle, axial and oriented to the cardinal points, with open courts containing one main altar and numerous rows of offering-tables ('Amarna). The latter feature possibly embodies religious symbolism connected with the concept of the solar year of 365 days. The sun altar is of a special type, in the form of a platform to which rises a stairway from the west ('Amarna, Sesebi, courts of Re'Horakhty in the mortuary temples in Western Thebes).

The program of the mortuary temple differs from that during the Old Kingdom. As a result of the new trend which aims at hiding the tomb usually cut in the rock of the mountains in Western Thebes, the mortuary temple is an independent building. Royal mortuary temples feature three chapels (Amun, the pharaoh's father, the Sun) set side by side.

Although an isolated example, the terraced approach characterizing the Mortuary Temple of Hatshepsut needs a specific emphasis, for it carried to its summit on a large scale the device already initiated in the mortuary temples of the Old Kingdom and in the mortuary temples and rock tombs of the Middle Kingdom (cf. Vol. II, pp. 53-59, 151-156; figs. 21-22, 59-60; pl. 7).

The type of peripteral temple which had appeared in the Middle Kingdom (cf. Vol. II, pp. 81, 238, 240) becomes a favorite. Its style could have had some influence in the development of the classical Greek temple.

The architects of the New Kingdom were responsible for the invention of the rock-cut temple, intended for cult or mortuary purposes. It seems that this invention was the practical solution for a temple located in the cliffs of the extremely narrow gorges of the Nile Valley. The type was not restricted to such sites, however, and most of the temples that were partly cut in the cliff

were fronted with terraced approaches similar to that of the Middle Kingdom tombs at Qaw.

According to the description of temples in royal inscriptions, rich materials were used lavishly. Besides wood, mostly imported from Lebanon and Syria, silver, electrum and gold sheets line wooden doors, stone floors, parts of low reliefs, and pyramidions. Builders knew how to deal with huge stone blocks and hoist them into position as columns, lintels, or ceilings. Many details prove that structural science was maintained at the same high level as that of the Middle Kingdom. To reduce the bending stresses in the ceiling the stone slabs of the aisles were carried out as projecting cantilevers beyond the architrave edge (Festival Hall of Thutmose III at Karnak). In an artificial island carrying a heavy pillared hall, thrust beams have been inserted at the bottom of the water channel surrounding the island, under the line of the piers between the retaining embankment of the island and the one opposite (cenotaph of Seti I at Abydos). The cutting of extensive temples into the rock in poor light and inadequate ventilation allows for the surmise that the technical methods of cutting stone, not to mention carving colossal statues and extensive low reliefs and painting them, had attained a high degree of perfection.

Although the Egyptian style could boast several masterpieces in religious architecture, both during the Old Kingdom and the Middle Kingdom, that of the New Kingdom is marked by a remarkable versatility. The naturalistic style, characterized by the plant-column, has lost most of its original connection with nature, and through the intensive process of stylization it has gradually produced the hybrid columns, which lose their elegance in the latest Ramesside times (pl. 60). A brief revival is noticeable as Prince Kha'mwas, the son of Ramses II, devises a cluster-column with bud-shaped capital having three bands binding the lower part of the shaft (Memphis). Another archaistic trend, which perhaps derives its inspiration from the Fourth Dynasty mortuary temple of Chephren, is represented by the sturdy monolithic pillars of granite and short intercolumniations in the unique cenotaph of Seti I at Abydos. Here, stark simplicity is blended with variety in the materials used (granite, sandstone, and limestone). But a refined sense of beauty, akin to that of classical Greek architecture, is also in favor and is perhaps even more conspicuous than ever before in the large temples. The characteristic elements are the polygonal columns erected in long rows in the porticoes (mortuary temple of Hatshepsut at Deir el Bahari) or halls (Festival Hall of Thutmose III at Karnak).



Plate 60. Bud columns from the mortuary temple of Ramses II at Abydos.

The open papyriform capitals at the top of the tall columns in the nave of the hypostyle hall retain much of their refined elegance developed in the Third Dynasty, now covered with a glamorous geometrized decoration in conventional color consisting of cartouches arrayed above the triangular leaves (Karnak; color plate XIIa).

This eclectic and mature style is not devoid of inventiveness. Wooden elements such as tent-pole columns are successfully adapted to stone, keeping their original feature, as in the inverted taper of the shaft and the bell-shaped capital (Festival Hall of Thutmose III). Elements alien to architecture, such as the sistrum, are copied in high relief on one face of the pillars (temple of Amenhotep III at El Kab), which are curiously shaped as an eight-sided shaft on its front and a sixteen-sided on its rear part. The sistrum grows into a "Hathoric" column with a two-sided or a four-sided capital, an original and aesthetic creation (shrine of Hathor at Deir el Bahari).

Antae are set regularly at the ends of rows of pillars or columns. They even show once as pilasters on the external faces of a temple ('Amada). The intercolumniation in porticoes and halls can be increased to emphasize an axis of the plan, such as that marked by a pathway leading to the portico (temple of Ay-Horemheb at Medinet Habu). The bases of the columns can be sliced off on their side facing the pathway to allow for the passage of the sleds carrying the sacred bark (Luxor, Medinet Habu, and others). Among the peculiar arrangements of Osiride pillars, appearing for the first time in the New Kingdom, one can notice a row of Osiride pillars fronting a row of columns or set along one side of a court, or an Osiride pillar at an anta at the end of a row of plain pillars (Ramesseum, Medinet Habu).

Perhaps the main achievement of religious architecture is its extensive and tasteful use of architectural statuary. Colossal statues are still erected as in earlier periods, abutting on the façades or between the columns in the temples; but they are also embodied into the structure and seem even to shape the design (rock temples at Abu Simbel). This trend, which seemingly had begun with Hatshepsut and Amenhotep II, became a characteristic feature of religious architecture under Ramses II, but soon declined (Ramses III).

Religious symbolism is exemplified at its best in important structures: the Maru-Aten ('Amarna) and the Osireion (cenotaph of Seti I at Abydos), both being architectural representations of cosmological ideology. The numerous offering-tables in the sun temples at 'Amarna probably have a calendrical

implication related to the ideology of the sun disk god as Creator. It has been recognized that the pylon, which forms the typical entrance façade to the temple, symbolizes the two mountains between which the sun rises on the horizon. According to Egyptian ideology the god would appear through the entrance gateway of the pylon and rise between its towers as did the sun between the two mountains. Symbolism plays an essential role even in the orientation of the layout: the terraced mortuary temple of Hatshepsut at Deir el Bahari and that of Amun at Luxor are oriented with their longitudinal axis toward the temple of Amun at Karnak. The isolated rows of pillars erected along a portico on one side of a forecourt in a mortuary temple, facing the entrance to the temple palace, are symbolically intended to greet Pharaoh and his suite when they come out ceremonially from the palace gateway (temple of Kamutef at Karnak, Ramesseum, Ramses III at Medinet Habu). Symbolism was also the main incentive in the creation of new decorative elements such as the cobra coiling up along the parapet wall of the ramp to Hatshepsut's temple, and the lion seated in front of it, and the rows of statues of apes above the cornice at Abu Simbel. The bunches of flowers and fowl hanging in a rather clumsy way about the upper part of column-shafts at 'Amarna (Maru-Aten) were probably meant to recall the potentiality of the Aten as Creator.

* * * * *

The achievement of religious architecture could therefore be pictured as analogous to that of domestic architecture, having attained the ideal set by the programs of the temple, whether as a cult temple or as a mortuary temple. While there is a standard typical plan for the cult temple used as a model, probably owing to its adequate and mature development (small temples of Ramses III at Karnak), other types of cult temples or chapels, as well as mortuary temples, attain their most elaborate stage (peripteral, rock-cut, and sun temples).

The achievement could be termed satisfactory with respect to efficiency (planning, perspective and cross-sectional design of the interiors), originality (new types such as rock-cut temples, use of architectural statuary), symbolism (Maru-Aten, Osireion, pylon), and beauty (classical beauty in Hatshepsut's mortuary temple; colossal scale allied to taste at Luxor and Karnak). Yet various aesthetic symptoms, pertaining mainly to architectural elements (poor proportions in statuary and columns, sketchy decoration of walls in sunk relief), point to a decline in the style, which is even more apparent in the funerary architecture of the same period.

IV

Funerary Architecture

Archaeological evidence about funerary architecture in the New Kingdom, besides being quite rich in itself, is supplemented by texts and representations of tomb chapels. The evolution of the superstructure of the mastaba toward a series of chambers and the extensive use of rock-cut tombs during the Middle Kingdom has led to the disappearance of the tomb chapel as a separate unit. It has become a part of the superstructure, the most important, and often the only one. In fact, the study of the superstructures will be that of the tomb chapels themselves. Royal tombs, however, have mortuary temples on the outskirts of the valley in Western Thebes.

EVIDENCE FROM TEXTS

Although yielding but meager information regarding architecture proper, the texts picture an interesting background, throwing light upon the mentality of those who built the tombs. The usual types already encountered in the Old Kingdom and especially in the Middle Kingdom recur. Thus, there is the sovereign who wishes to favor his loyal official. Queen Aahhotep I erects a tomb at Abydos for her herald Keres, a boon that the latter records with joy on a stela: "The king's-mother has commanded to have made for thee a tomb at the stairway of the great god, lord of Abydos, confirming thy every office and every favor. There shall be made for thee thy statues, abiding in the temple. . . . There shall be made for thee mortuary offerings, as the king's-wife does for the one whom she has loved."⁴¹⁰

On a famous stela Pharaoh Ahmose I, founder of the Eighteenth Dynasty, records his plan to build a second funerary complex of pyramid and

temple for his grandmother Tetisheri, "who already has a tomb and a mortuary temple on the soil of Thebes and Abydos."⁴¹¹ This is an instance of the existence of cenotaphs for royalty who were already buried elsewhere.

There is also the architect who boasts about his achievement in constructing a tomb for his pharaoh. Ineny reports about the preparation of the cliff tomb of Thutmose I at Thebes: "I inspected the excavation of the cliff-tomb of his majesty, alone, no one seeing, no one hearing. I sought out the excellent things upon . . . I was vigilant in seeking that which is excellent. I made fields of clay, in order to plaster their tombs of the necropolis; it was a work such as the ancestors had not done which I was obliged to do there . . . I sought out for those who should be after me. It was a work of my heart, my virtue was wisdom; there was not given to me a command by an elder. I shall be praised because of my wisdom after years, by those who shall imitate that which I have done."⁴¹² Ineny lays much stress upon the fact that he alone supervised the construction of the tomb, indicative that such a measure had become necessary to prevent tomb robberies after various architectural devices had failed to prove effective against them. He also points out the novelty of the method he devised to plaster the rock walls with mud to hide the roughness of the rock face.

A similar duty was carried out by another official, Hapuseneb for Thutmose II: "[He appointed me] to conduct the work upon his cliff-tomb, because of the great excellence of my plans."⁴¹³

Restoration of ancient tombs, such as was practiced according to Middle Kingdom texts, was also considered a pious duty by New Kingdom rulers. The prophet Yuf states that he was charged by Queen Aahhotep to restore the ruined tomb of her ancestor Queen Sebekemsaf (Thirteenth Dynasty) at Edfu: "I repaired this tomb of the king's-daughter, Sebekemsaf, after finding it beginning to go to ruin."⁴¹⁴

The importance of a tomb to the New Kingdom officials is vividly illustrated in the remarkable text of Ra'mose, the vizier under Amenhotep IV: "I have arrived in peace at my tomb, possessed of the favor of the Good God. I did the pleasure of the king in my time; I did not disregard a regulation which he commanded, I practiced no deceit against the people, in order that I might gain my tomb, upon the great West of Thebes."⁴¹⁵ Ra'mose states explicitly that the ultimate aim of his ideal behavior was "to gain his tomb," a characteristic state of mind indeed.

One of the earliest texts (reign of Horemheb) speaking about the violation of a royal tomb in the Theban Necropolis is a graffito in the tomb of Thutmose IV stating that the burial of that pharaoh was restored by Meya, chief of works in the necropolis.⁴¹⁶ The occurrence of this text at so early a date allows us to surmise that the violation of the Theban tombs began in the anarchy that followed the religious revolution of Amenhotep IV-Akhenaten.

The pious regard for the dead and their tombs is well illustrated in the dedicatory inscription of Ramses III from the temple at Medinet Habu: "I did not overturn the tombs of the lords of life, the tomb-chambers of the ancestors, the glorious place which was at the beginning, of the lord of Rosta, the divine way of the gods and the cavern-dwellers to the revered dead."⁴¹⁷ Ramses III wishes to state very clearly that he did not appropriate the ground of the earlier tombs when locating his temple in the ancient Theban necropolis.

The construction of a royal tomb was accompanied by the establishment of a new title to land for the benefit of the gods of the necropolis. Such is the meaning conveyed by the dedication in the tomb of Ramses V at Thebes: "He made (it) as his monument for his fathers, the gods of the Nether World, making for them a new title, in order that their names might be renewed; that they may give very many jubilees upon the Horus-throne of the living, every country beneath his feet, like Re, forever."⁴¹⁸

A penetrating light is thrown on the administration of the royal necropolis at Thebes by the official papyrus records of tomb robberies from the time of Ramses IX.⁴¹⁹ Several officials seem to have been involved in the violation. The inspection of the tombs of the pharaohs from the Eleventh to the Thirteenth Dynasty in the western plain of Thebes and of the royal rock-cut tombs of the Valley of the Kings yields valuable information, corroborated by archaeological data from the tombs themselves.

The commission sent to inspect the tombs visited the part of the royal cemetery at Dra' abul Naga dating back to the Eleventh, Thirteenth, Seventeenth, and Eighteenth dynasties. The next year the violation of the tomb of Queen Isis, wife of Ramses III, was discovered: "They opened her tomb, they found the granite block, the eight thieves having done damage in the (—). They had wrought evil destruction on all that was therein; and they had damaged [its] owner."⁴²⁰ In the nineteenth year of Ramses IX (Year 1 of Ramses X) the robbery of the tombs of Seti I and Ramses II was discovered and soon thereafter that of Queen Nesimut and of Queen Bekurel,⁴²¹ wife of

Seti, followed by that of Amenhotep III. Records of the restoration of the royal mummies were written on their coffins in the reigns of Pinedjem I (Twenty-First Dynasty)⁴²² and Pinedjem II. A scribe and chief inspector Nesupeke-shuti, son of Bakenkhonsu, states how the mummies were taken into the tomb of Queen Inhapy: "That which is in good condition before me, no harm shall befall it, through my bringing them (sic) out from the tomb in which they rest, and they shall be taken into the tomb of (Queen) Inhapi, which is in the 'Great Place,' wherein King Amenhotep rests."⁴²³

According to the Abbott Papyrus it is said of the tomb of Amenhotep I (?): "The eternal horizon of King Zeserkere, L. P. H., son of Re, Amenhotep (I), L. P. H., which is 120 cubits deep (measured) from its superstructure, which is called: 'The-High-Ascent,' north of the 'House-of-Amenhotep,-L.-P.-H.,-of-the-Garden.'"⁴²⁴ This statement concerning the depth of 120 cubits was verified by the discoverer of the tomb, Carter, who gave 62.8 meters, which is equivalent to 120 cubits, 0 palm, 1.5 digits,⁴²⁵ a record of extreme precision, provided the identification of the tomb be true (doubted by Peet). Such precision had already been noticed in the text of Khnumhotep describing his rock-cut tomb⁴²⁶—further evidence in favor of the credibility of Egyptian accounts about architectural monuments.

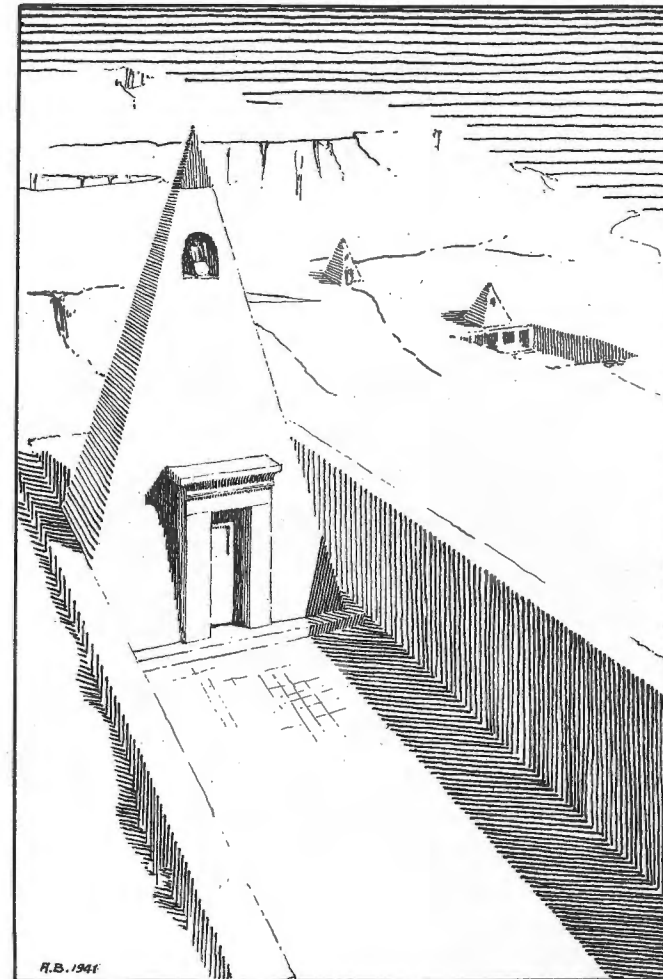
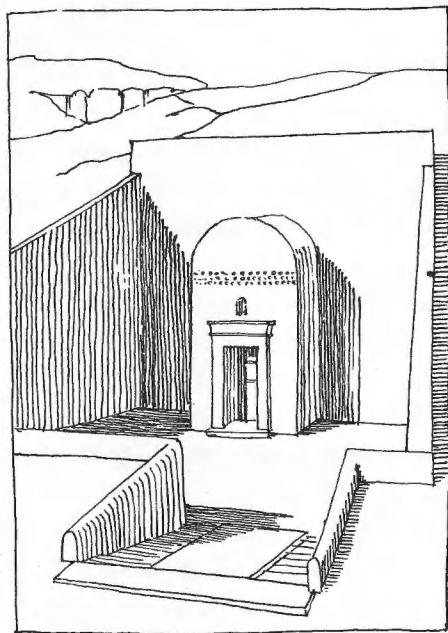
REPRESENTATIONAL EVIDENCE⁴²⁷

Among the scenes painted on the walls of private tombs at Thebes in the Eighteenth Dynasty, there appear representations of the chapel of the tomb itself. The funeral procession is seen reaching it, and various funerary rites are performed upon the mummy set in front of the chapel. Such a representation is more or less stylized, but it nevertheless shows the characteristic architectural features of the superstructures. It is not until the end of the Eighteenth Dynasty and often in the Nineteenth and Twentieth dynasties that this type of representation assumes its fullest development. Three types can be differentiated: a rectangular or vaulted façade, a pyramid sometimes upon a base or a building, and a pyramid with portico. As it would be awkward to try to dissociate the mortuary chapel that forms the superstructure of the tomb from its other parts, these chapels will be considered here, although this may be regarded as an encroachment upon the study of religious architecture.

TYPE I. A rectangular façade, crowned with a cornice and having a central or side door, similar to the representation of the tomb in the vignettes of the Book of the Dead, is found in the tombs from the beginning of the Eighteenth Dynasty. It is of the type of the traditional façade of the archaic shrine (hieroglyph *seh*), with battered sides surrounded by a torus-molding (Khaemhat, Amenemhat), and sometimes topped just beneath the cornice with three or four horizontal rows of circles (Neferhotep, Ra'mose). It has been proved that these circles are the representations of the circular inscribed bases of earthenware cones inserted into the masonry.⁴²⁸ A more developed façade shows a high structure roofed over with a flat vault, under which runs a frieze of four rows of circles and a rounded niche (Nebamun, Ipuky). This latter treatment has been identified in the eastern face of the pyramidal superstructures of tombs at Deir el Medina.

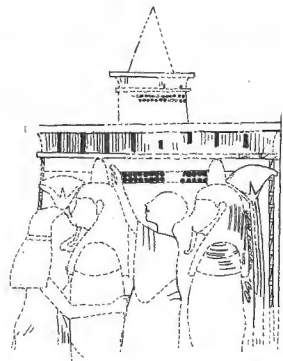
The rectangular or rounded façade (fig. 189) can be restored, on the basis of traces found in the actual superstructures of tombs, as entrance porches projecting from the back wall of a court cut in the cliff.

189. Restored perspective of an entrance to the chapel of a Theban private tomb, after a representation in an Egyptian mural.



190. Restored perspective of the superstructure of the tomb of Nakhtamun, after the mural in his tomb.

TYPE II. The main feature of most of the Theban paintings representing tomb chapels is a pyramidal structure. It has a high triangular face with a steep angle of incline, a doorway, simple or topped with a cornice, and a rounded niche just below the top (fig. 190). This is shown as a triangle, colored dark to indicate a stone pyramidion. At the base a stripe of color represents a stone course (Deir el Medina, Nakhtamun), probably a socle or platform.



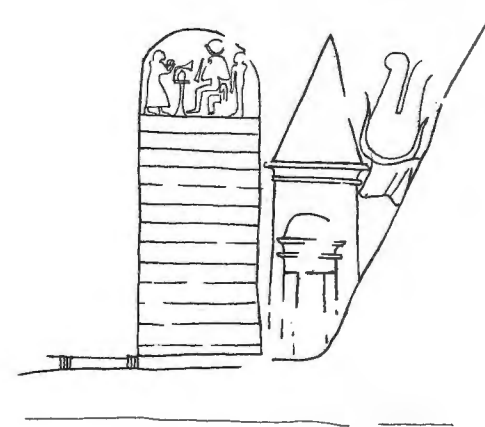
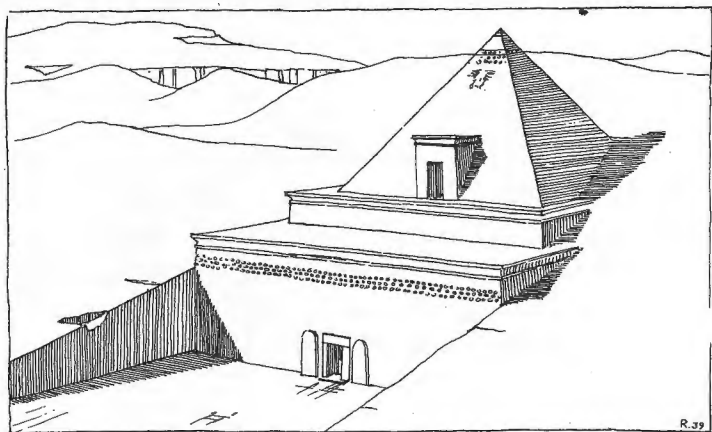
191. Representation of the superstructure of the tomb of Neferhotep from his tomb murals.

Sometimes the pyramid is erected upon a base of varying height, crowned with a cornice. The base can be very low and without any apparent entrance (Userhat). Usually, however, it assumes the shape of a high rectangular façade with battered sides, cornice, and door, precisely similar to the superstructure imitating the façade of an archaic shrine (Amenmose, Ra'mose, Nedjemger, Nakhtamun).

A further development of this type consists of a double base, the lower step being very large, probably to be interpreted as a stepped base, surmounted by a pyramid (Neferhotep) (figs. 191, 192). In another example (Khonsmose) a flat curve tops the cornice of the doorway, an indication that this doorway protrudes as a porch and is covered with a dome (figs. 193, 194).

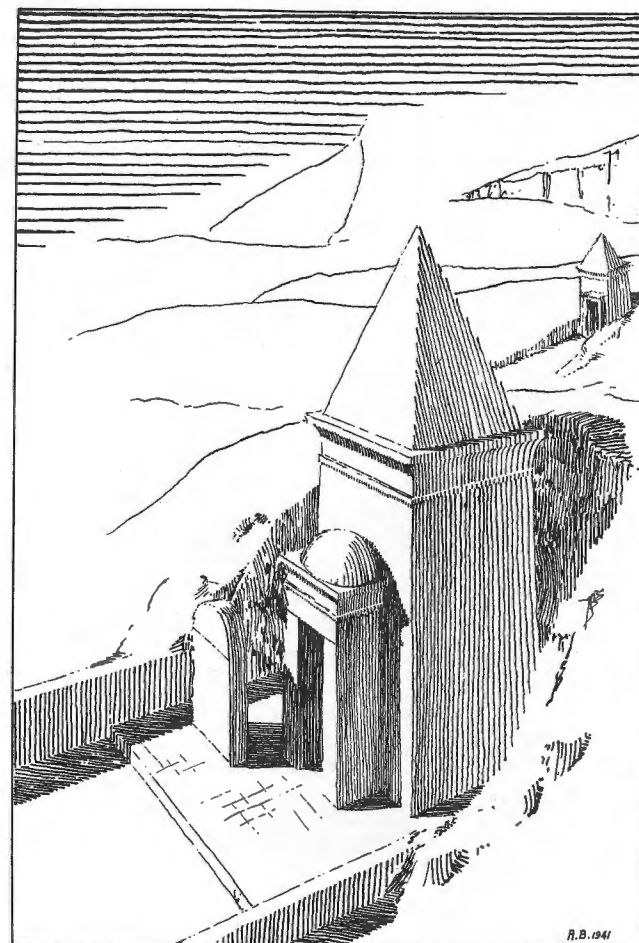
When compared to the superstructure actually found at Deir el Medina (Eighteenth to Nineteenth dynasties), the paintings representing a pyramid in its various forms prove to correspond exactly and can be used in architectural

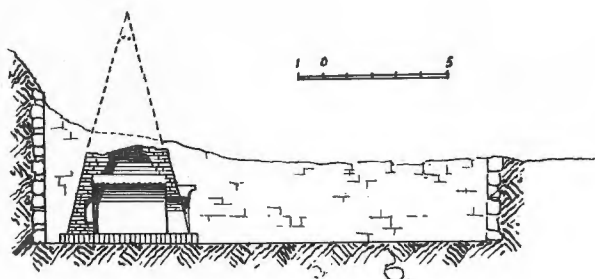
192. Restored perspective of the superstructure of Neferhotep's tomb.



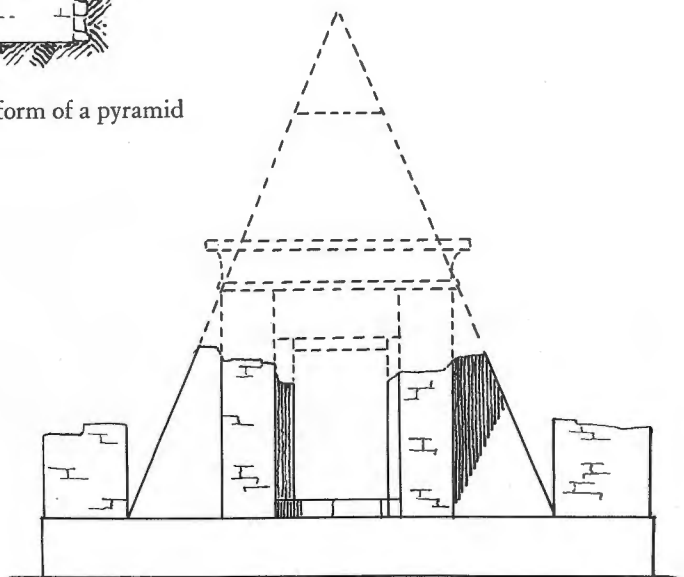
193. Representation of the funerary chapel of Khonsmose from his tomb murals.

194. Restored view of the funerary chapel of Khonsmose.

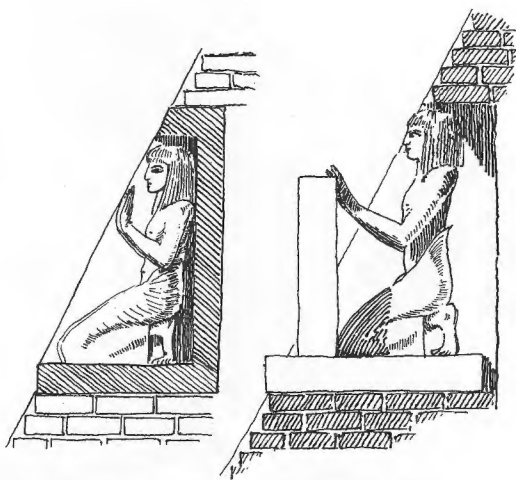




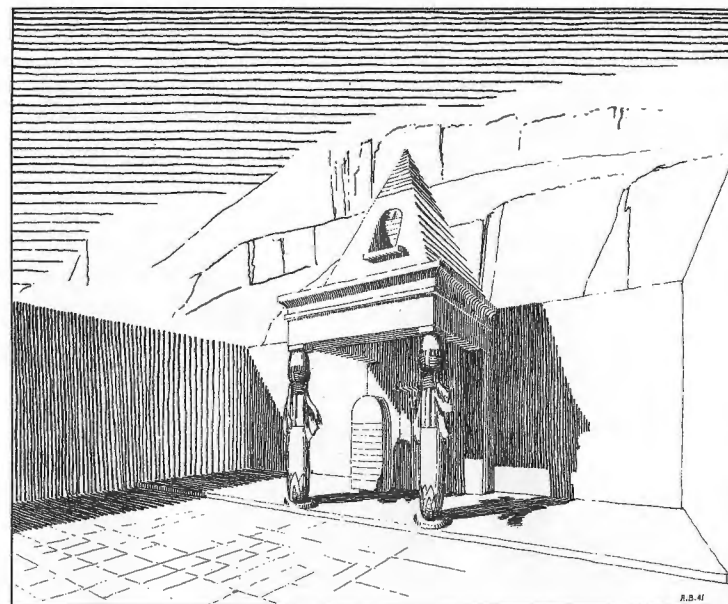
195. Superstructure of a tomb in the form of a pyramid at Deir el Medina.



196. Front elevation of the superstructure of the chapel of Kha'.



197. Two types of statues of the deceased kneeling and set in the eastern niche at the top of the pyramid.

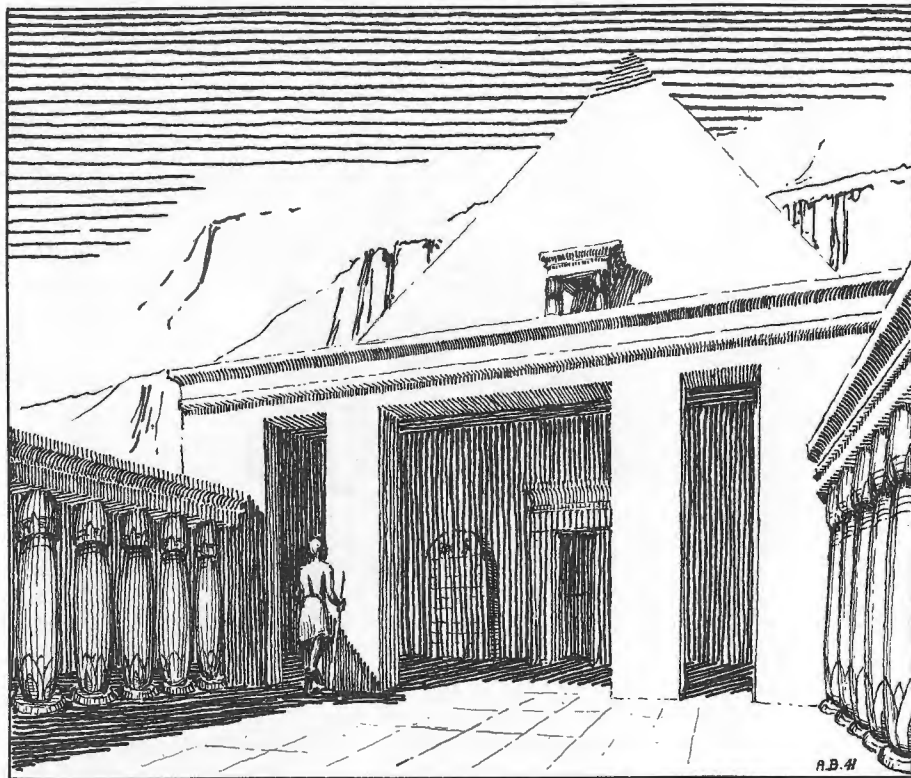


198. Restored perspective of an entrance to a private tomb with a porch surmounted by a pyramid.

restoration. Thus the pyramid of Kha' (reign of Amenhotep III at Deir el Medina) has an angle of incline of 75° , with a corniced doorway on the east face, and contains a vaulted chamber. It rises from a low platform, shown as a stripe on the paintings (figs. 195, 196). It had, most probably, an arched niche high up in the east face, containing either a stela held by a statue of the deceased kneeling, or a statue of the deceased kneeling and adoring the sun with both arms raised (fig. 197). Numerous examples of these have been found in this necropolis. The pyramidion is actually of dark hard stone—granite, sandstone, or limestone.

Certain adjustments have been introduced in the interpretations of the façade by the Egyptian painter: the width of the chapel has been considerably reduced and the dimensions of the funerary stela have been increased in accordance with the scale of the personages shown in front of the chapel.

TYPE III. A final development of the superstructure, as represented in contemporary tomb paintings, is the occurrence of a portico on two or more columns or pillars in front of the entrance façade (fig. 198). This portico is usually

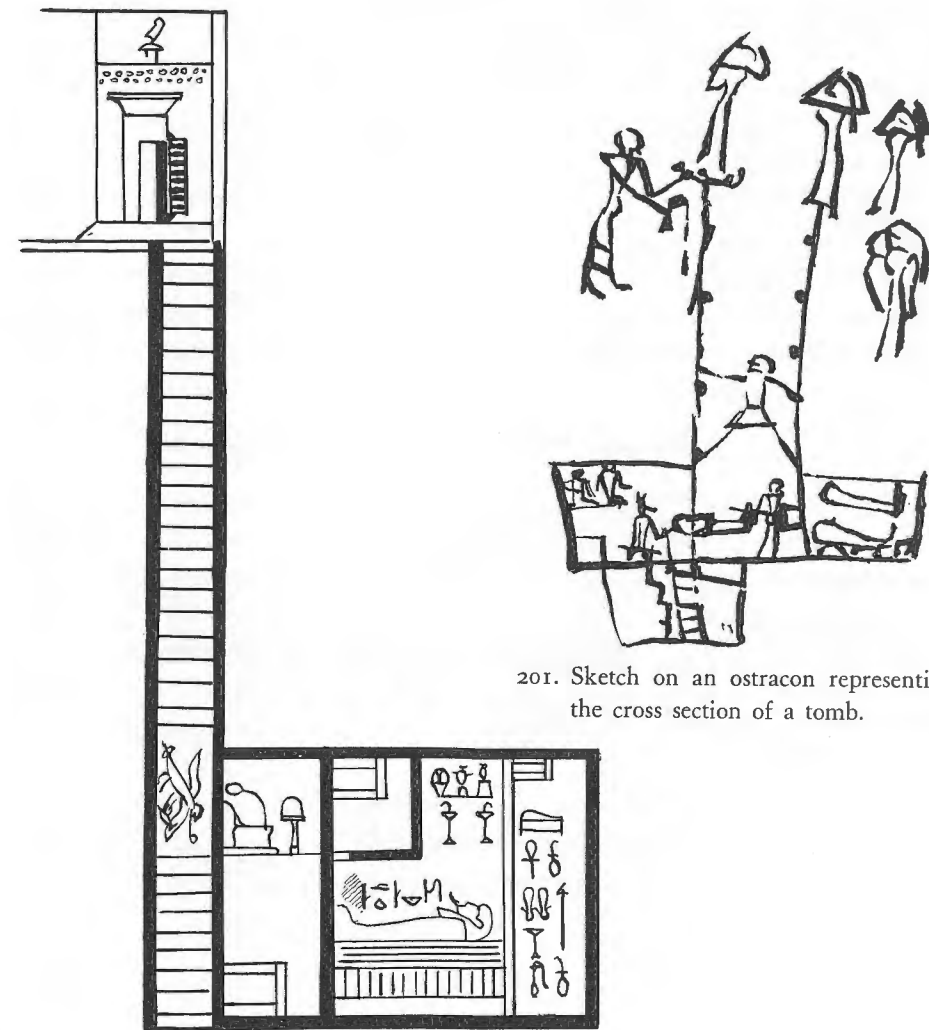


199. Restored perspective of an entrance to a private tomb featuring a front portico.

painted as a frame to the façade (Amenemhab, Khons), but is sometimes shown in side view (Neferenpet). The pyramid appears above the cornice of the chapel and is of the same width or narrower than the chapel itself. When the pyramid is narrower than the chapel it can be surmised that the pyramid was erected on the ground and that its upper part only was shown. Some paintings represent a pyramid with a porticoed entrance and another portico of four columns beside it, drawn on a larger scale (Amenemopet, Tjonufer, Tjoy). This is obviously an attempt to represent in perspective a portico running along both sides of the court (fig. 199). At Deir el Medina and at Dra' abul Naga remains of porticoes on two bundle papyriform columns surmounted by a hollow pyramid have actually been identified. The stela is erected, as it is shown in the paintings, to the left of the entrance.

PAPYRUS OF NEBQED (fig. 200).⁴²⁰ A unique drawing shows the elevation of a chapel, the section through its shaft, and the plan of the burial apartment in one compound. The chapel is of the simple rectangular type, erected upon a low base with two rows of funerary cones and a doorway with a cornice and two leaves. The shaft is vertical with horizontal joints indicating the courses of the lining, and down it the soul of the deceased, depicted as a human-headed bird, flutters to meet the body lying on a bier. The burial apartment consists of three main chambers, full of funerary furniture, communicating by means of doorways shown rabatted.

200. Drawing from the Papyrus of Nebqed representing a complete tomb.



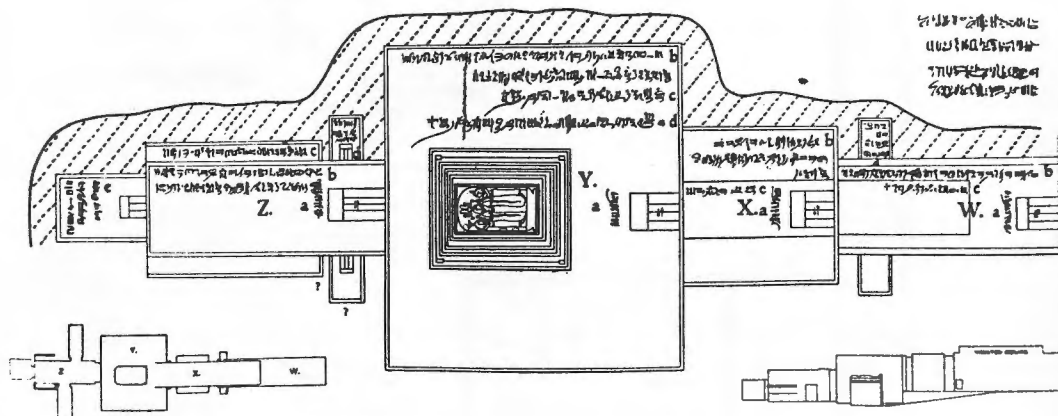
201. Sketch on an ostracum representing the cross section of a tomb.

SKETCH ON AN OSTRACON (Eighteenth Dynasty, *fig. 201*).⁴³⁰ A true section, hurriedly drawn in ink, shows a vertical shaft and its burial apartment. At ground level four women are weeping and wailing, while a priest pours a libation and burns incense in a censer. A man is seen descending the shaft, using the alternating recesses cut specially in the opposite faces of the shaft for this purpose. Two underground rooms and a third at a lower level, accessible by stairs, form the burial apartment. In the small chamber two mummies are already resting, while in the main one the mummy that has just been lowered down is being attended by two priests.

TOMB OF RAMSES IV (*fig. 202*).⁴³¹ The plan of the tomb of Ramses IV had been drawn in ink and color wash on a papyrus, probably as a record for subsequent reference. This drawing uses conventional indications such as hatching for sections, scale (1:28), double lines for sections in walls and single lines for differences in pavement levels, and it notes the dimensions as do our modern working drawings. It compares favorably with a modern sketch plan. All doorways are rabatted. The drawing agrees with the actual tomb except in certain details, and fifteen of the dimensions are generally the same and eight somewhat different.

The main interest of this document is that it gives the names of the various parts of a royal rock-cut tomb from the New Kingdom. The drawing is complete, except to the right where it begins with the fourth corridor (W.)

202. Ancient plan of the tomb of Ramses IV on papyrus.



stja netjer (lit. "way of god"), containing a descending ramp and a recess labeled "room" (*at*) in the text, on either wall. The four central doors between the main sections are said to be "closed," probably with the two leaves as actually indicated in the drawing.

The hall (X) next to the corridor has a wide recess on either side. The texts describe it as "The waiting-room (*wsekhet iseq*) of 9 cubits, width 8 cubits, height 9 cubits, drawn in contours, engraved with the chisel, filled in with colors and completed." Its name stems from its use as a waiting room either by the relatives before they enter the sarcophagus hall, or by the deceased himself during the funeral. The "negative confession" written on its right wall, in which the deceased is made to deny having committed any of the sins mentioned in a lengthy list, would have been recited while the mummy waited to be admitted into the sarcophagus chamber.

This sarcophagus hall (Y) bears the name of "House of Gold" (*per nebwi*). It contains the golden sarcophagus and shrines covering it, clearly indicated in the drawing and characterized by the golden color of its walls. Gold was supposed to help the rebirth of the deceased pharaoh, identified with the sun.⁴³² It is said to be "provided with the equipment of His Majesty," a denomination for the four naoi and the baldachino sheltering the sarcophagus, as shown in the plan, examples of which have been discovered in the tomb of Tut'ankhamun.

The corridor (Z) is called "the place of shabtis," which are the small statuettes representing laborers intended to do the fieldwork instead of the deceased in the Netherworld. The statuettes were actually represented on the walls of the two side chambers. The wide recessed shelf in the wall (1 m. from the floor) is called "The place of rest of the deities" (*ta set hetep en na netjerw*), its walls being decorated with the paintings of naoi sheltering various deities. It could have been used as a shelf for wooden naoi containing such statues.

The rear room is named "The Treasury of the Interior" (*per hedj en pa neferw*), and was used as a magazine for funerary equipment, as is proved by the paintings on its walls.

THE DIMENSIONS OF A ROYAL TOMB. On the recto of the same papyrus is the description with dimensions of a royal tomb. Beside giving various technical terms, this text describes the corridors as "second, third and fourth" and the

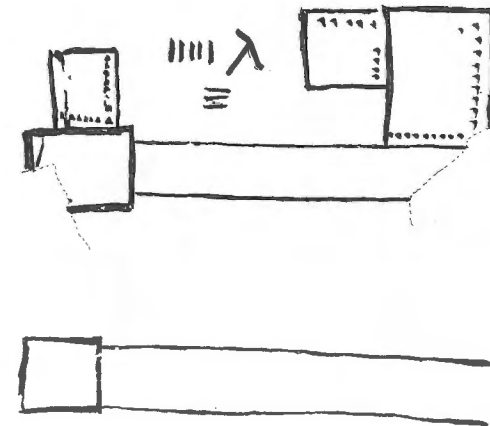
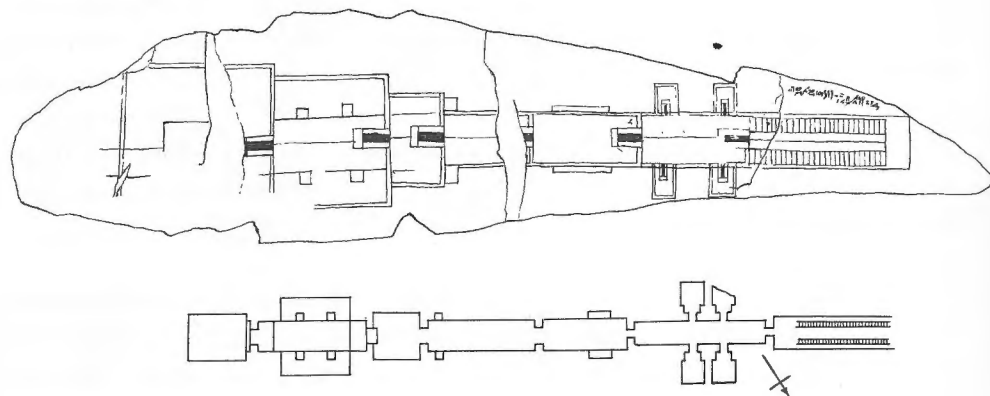
sarcophagus hall as the "Hall of the Chariot." A chariot was actually found near the sarcophagus in the tombs of Iuya and Thutmose IV.

TOMB OF RAMSES IX (*fig. 203*).⁴³³ On a limestone flake found in the Valley of the Kings the plan of the tomb of Ramses IX is drawn in red ink, probably as a sketch plan to be used by the workmen. The scale is small (1:270) and the distorted proportions of the rear hall and lateral niches point to a certain neglect. The plan is symmetrical and shows one of the rare indications of the axis of symmetry. Some additional names of parts of tombs are given. The entrance passage with its stairway is "The corridor of the Path of Shu," pointing to a relation with Shu, god of the atmosphere; so called because it is open to the sky and the rays of the sun. The following section is "The corridor of the Sun," it being the only covered part of the tomb which the sun's rays can enter. On the walls are scenes from the "Book of the Sun's Journey Through the Netherworld."

The two following corridors were probably called the "second" and "third," as in the drawing of the tomb of Ramses IV. In the second corridor the wide niches are "the shrines in which rest the deities of the West," which are actually painted with mythological figures.

The square hall is the "waiting hall," as in the two other drawings, which is separated from the sarcophagus hall by a large hall with four pillars, set two on each side of the central descending ramp called "descent." This pillared hall is the "Treasury," which is set beyond the sarcophagus hall in the

203. Plan on an ostracon of the tomb of Ramses IX, compared to the actual plan.



204. Sketch of a corridor and chambers in the tomb of Senmut.

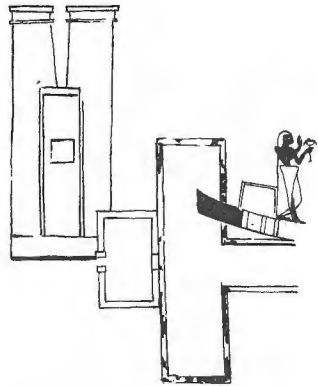
two other drawings. The "House of Gold" (the sarcophagus hall) is shown as being much larger than it actually is.

PLAN OF A TOMB (Senmut's tomb).⁴³⁴ A hasty sketch represents a corridor ending in a shaft and three side chambers with the dimensions marked (*fig. 204*).

Examples of Representations of Funerary Chapels in the Necropolis

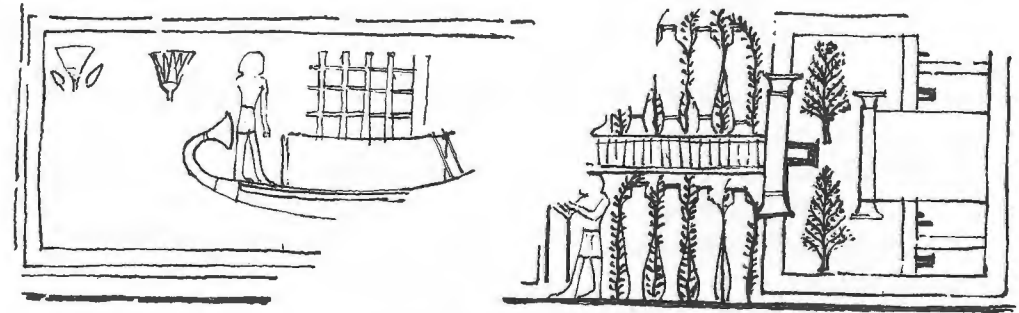
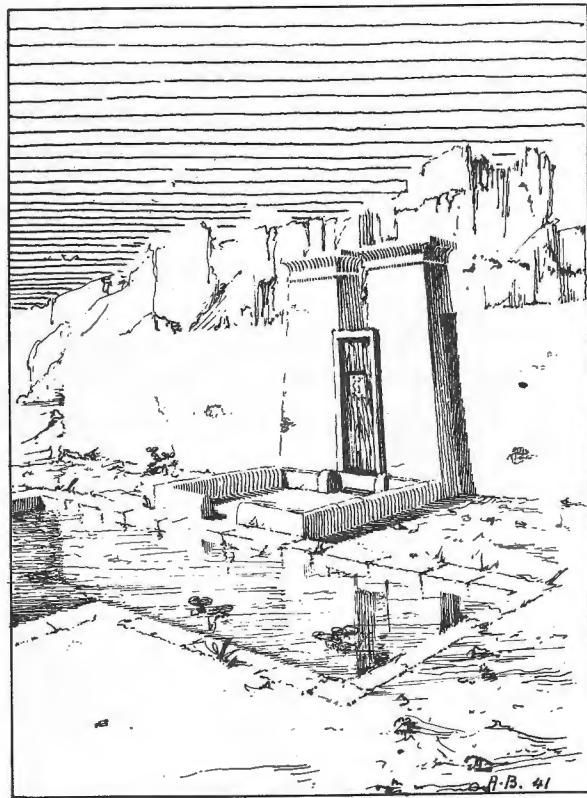
THUTMOSE III (from the tomb of Khons).⁴³⁵ The painting is a compound of a T-shaped stretch of water and a rectangular enclosure with two entrances forming the waterfront (*figs. 205, 206*). This is adjacent to a painting of the elevation of the portal, turned through 90°. The portal assumes the shape of a high pylon and a central door with a tablet. Such water portals were built on the border of the Valley, at the end of the pathways descending from the cliff tombs.

FUNERARY CHAPEL OF NAKHTMIN.⁴³⁶ This seems to be a large central room, flanked by two side rooms and a tree on either side, and surrounded by a high wall with a central pylon and doorway (*figs. 207, 208*). A long stairway bordered by two rows of vases and plants ascends from a pond to the entrance.



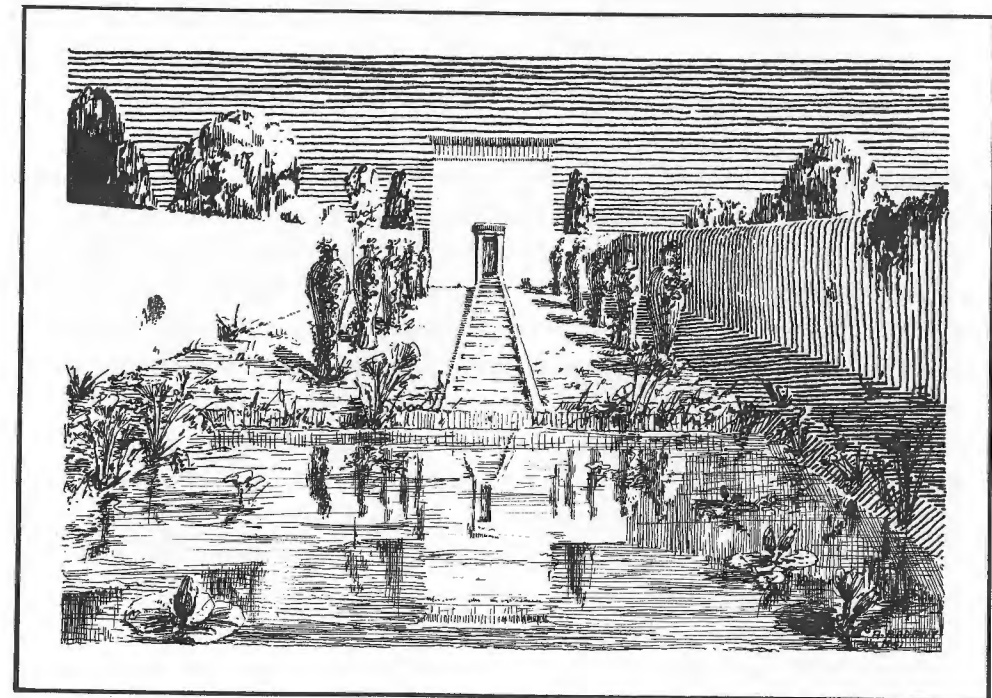
205. Representation of a quay and the chapel of Thutmose III from a mural in the tomb of Khons.

206. Restored perspective of the entrance to the chapel of Thutmose III.



207. Mural representing the funerary chapel of Nakhtmin.

208. Restored perspective of the chapel of Nakhtmin and its garden.



A Description of the Typical Funerary Complex of a Private Tomb

In the light of the valuable information derived from the study of contemporaneous representations of chapels a clear description of the funerary complex of a private tomb can be restored. A comparison of the various types of chapels pictured on the tomb walls with the actual remains proves the correspondence of both data. Architectural as well as religious information can therefore be safely deduced.

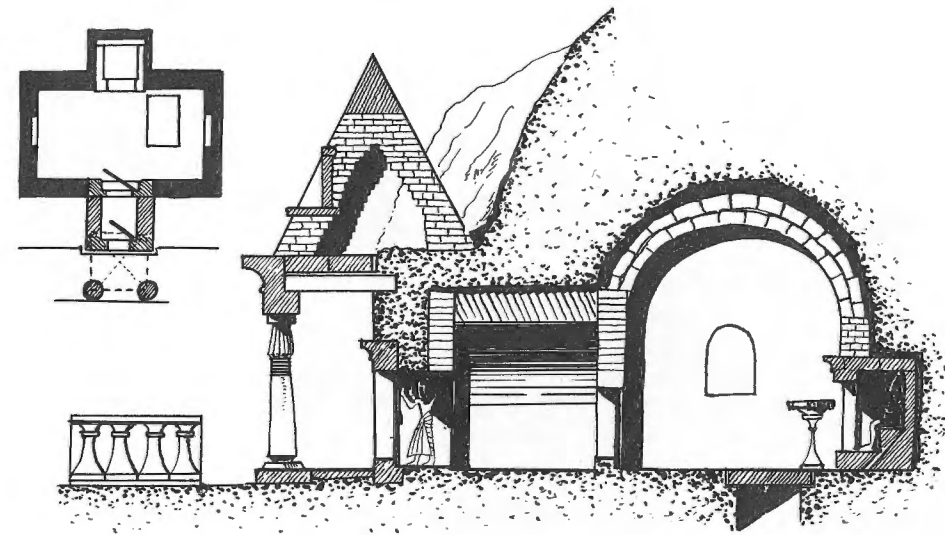
For large tombs a valley portal marked the lower end of the pathway leading up to a valley temple. Several examples are extant, such as the mortuary valley temples of Amenhotep II, Siptah (Nineteenth Dynasty), Amenhotep I (Qurna), Seti I (Qurna), Thutmose IV, Wedjmose (Eighteenth Dynasty), Queen Tawosert, wife of Siptah, Merneptah, and Ramses II (Ramesseum). These structures, independent of the tomb, replaced the valley temple and the funerary temple of the Old Kingdom pyramid complex.

Osirian and sun myths have become united in certain areas of the Theban necropolis, while they remain separate in others (Dra' abul Naga, tomb of Bakenkhonsu). The Osirian tomb is cut deep into the cliff, and its façade can be restored at the rear of a court, partly hewn in the rock. The wall is either plane or cut with palace-façade recessed paneling (Amenuser). Usually a columned portico runs along it and shelters the funerary stela erected to the left of the central entrance. Here were performed the rites during the funeral, as the mummy stood near the stela, ready to be introduced to its final resting place. A pyramid of brick can be built above the central part of the portico or porch. A shaft or ramp descends from the court or chapel to the burial apartment. This was the type of family tomb commonly used at the end of the Eighteenth Dynasty and during the Nineteenth Dynasty at Thebes (fig. 209).

The tombs of private people consisted of a chapel, covered with a pyramid and having sometimes on its east side a portico or an awning sheltering the funerary stela. An arched niche in the face of the pyramid contained the statue, or stela and statue of the deceased. A shaft descended to the tomb chamber below.

It is quite probable, on textual and graphical evidence, that in front of the chapels on the border of the valley some kind of funerary garden was laid out, to which a landing place on a waterway served as approach.

That the Theban tombs of the Eighteenth to the Nineteenth dynasties

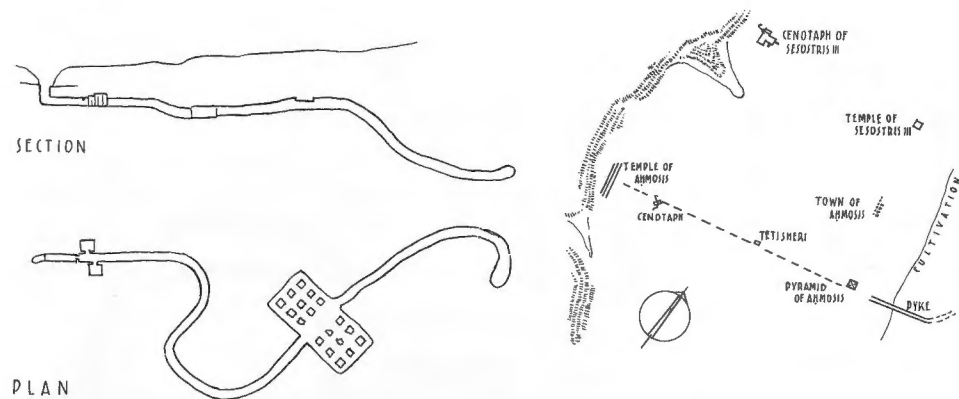


209. Plan and section of the superstructure of a tomb at Deir el Medina.

should take over such an architectural element as the pyramid, which had been the prerogative of the Egyptian pharaoh even as late as the beginning of the Eighteenth Dynasty, is quite in accordance with the development of the Egyptian democratization process. At the same time the persistence of the pyramidal superstructure in this particular necropolis could have been due to the pyramid-shaped apex of the western mountain, deified under various names (cf. Vol. II, pp. 156-157, *The Theban Necropolis in the Middle Kingdom*).

TYPICAL EXAMPLES OF ROYAL TOMBS IN THE NEW KINGDOM

CENOTAPH OF AHMOSE AT ABYDOS.⁴³⁷ The actual tomb of Ahmose was presumably at Thebes. At Abydos this pharaoh caused a cenotaph tomb to be built underground, at some distance south of that of Senusert III (Twelfth Dynasty). The plan is a long corridor, with an S-shaped covered part and a large hypostyle hall (fig. 210). A shallow well descends vertically to a horizontal corridor of low ceiling which runs directly north. Two small side rooms open off this straight stretch. The curved stretch, somewhat larger in section, opens



210. Layout, plan, and section of the cenotaph of Ahmose at Abydos.

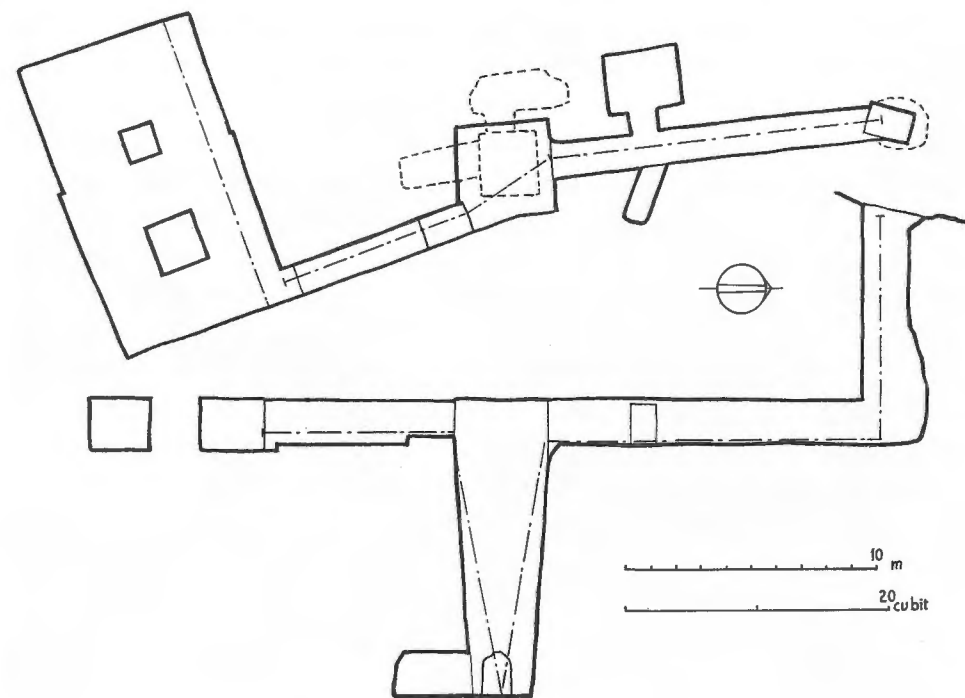
at right angles in the middle of the long side of a large rectangular hall with three rows of six square pillars each. The corridor continues from the opposite side of the hall and runs deeper along a curved plan into a rounded room, left unfinished, as was the last part of the corridor itself.

The general layout of the corridor shows a vague resemblance to that of the cenotaph of Senusert III, the latter, however, having been well finished and provided with a double wall with horizontal passages at its top and bottom, and an inclined passage blocked with granite plugs—both being devices to lead the thieves astray.⁴³⁸

To the west of this substructure and at the foot of the sand hill stand the remains of its terraced temple with a retaining wall of brick and a second one in stone, along a terrace at a higher level. Almost nothing could be made out of the paved court, the various rooms, and the silo at the southern corner of the terraces.

It might be surmised, on the evidence of the nearby pyramidal cenotaph that Ahmose built for his grandmother Tetisheri, that his own cenotaph also had a pyramid as superstructure.

CENOTAPH OF QUEEN TETISHERI.⁴³⁹ To the east of the cenotaph of Ahmose and on a line with it and with the shrine of Tetisheri are the remains of a pyramid, once coated with stone at an angle of incline of 60° . The entrance was not found and the interior has never been visited. The tomb of the queen is said by the text on the dedicatory stela of Ahmose⁴⁴⁰ to have been built at Thebes:



211. Plan and section of a royal tomb.

“She has already a tomb and a mortuary temple on the soil of Thebes and Abydos.”

TOMB OF AMENHOTEP I (?)⁴⁴¹ Here the architect innovated two main elements in royal funerary architecture. He was the first to separate the tomb from its mortuary temple and to sink a large shaft at the end of the first part of the underground passage of the tomb to delude the thieves. This was a simplification of the devices already elaborated by Senusert III in the underground passage and double shaft of his cenotaph at Abydos. The location of the mortuary temple at some distance from the tomb was also a precaution to hide the latter. It had become obvious, even at the beginning of the Eighteenth Dynasty, that neither the technical skill of the Old Kingdom nor the architectural devices so ingeniously invented by the Middle Kingdom engineers could withstand the malicious enterprises of the robbers in connivance with responsible officials.

The tomb, south of Dra' abul Naga, consists of a vertical shaft leading down to a horizontal N.-S. corridor, with a small room at one side and a deep niche on the other (fig. 211). A large square shaft ending this first part of the corridor goes down deep, while diminishing in section, to two rooms probably intended as a false burial apartment. At the southeast corner of the shaft the corridor continues on the same level as before, but in a somewhat different direction, to a rectangular hall enlarged westward. Each of the two parts of this hall has a square pillar to support the rock ceiling. It has been surmised that the enlargement of this hall intended for the burial of Amenhotep had been planned to permit the burial of his mother, Queen Ahmes Nefertari. Numerous fragments of vases with the name of this queen were discovered in the hall, and the mortuary chapels of both Amenhotep I and Ahmes Nefertari were found side by side, as was described upon the stela.

If the identification of this tomb as Amenhotep's is correct,⁴⁴² it affords an extremely interesting corroboration of the exactness of ancient Egyptian texts describing monuments.

No causeway connects the tomb to the remains of the neighboring chapels of Amenhotep I and Ahmes Nefertari.

THE VALLEY OF THE KINGS (Arabic, *Biban el Moluk*, lit. "Doorways of the Kings"). The successor of Amenhotep I, Pharaoh Thutmose I, was the first to have his tomb cut in the cliffs of the desert valley to the northwest of Deir el Bahari now known as Valley of the Kings (pl. 61). It is clear that pharaohs and responsible officials had become at a loss to insure the security of the royal tombs. The rock-cut tomb was to be completely hidden, and the work on its preparation was to be kept secret. The architect Ineny boasts that he supervised the work at the tomb of Thutmose I, being alone without "anyone seeing or hearing." It has been surmised that the laborers employed at this work were prisoners of war who were killed as soon as the project had been completed.⁴⁴³

What was the main incentive that led to the choice of this valley as the place of burial for Thutmose I? The pharaohs of the latter part of the Eleventh Dynasty had already established their mortuary complexes at the front of the cliff, between 'Assassif and Qurnet Mar'i. The Twelfth and Thirteenth dynasties and finally Amenhotep I gradually shifted northward, approaching the entrance to the Valley of the Kings. The approach to the valley cirque is dominated in the background by a mountain curiously shaped like an Egyp-



Plate 61. The desert Valley of the Kings in Western Thebes.

tian pyramid (color plate XIII). This is known now as El Qurn, "The Horn," in modern Arabic, and was called "The Front" or "Peak" by the ancient Egyptians, who had dedicated it to the serpent goddess Meryt Seger, "The One-loving-Silence." Could this concept have influenced the tradition-minded Egyptians? ⁴⁴⁴ Pharaoh would have therefore renounced the pyramidal superstructure that had formed the main feature of his tomb even up to the early Eighteenth Dynasty in favor of this pyramid embodied in the mountain itself. It is a fact that nearly all the pharaohs between the Eighteenth and Twentieth dynasties had their tombs cut in the cliffs of this valley. In several private tombs there are lists of these "Lords of the West," or pharaohs buried in Western Thebes.


TYPES AND EVOLUTION OF ROYAL TOMBS

The scheme of a royal tomb consists basically of an inclined corridor in three sections, passing through an antechamber and ending in a sarcophagus chamber. Various characteristics, such as a 90° change in the direction of the corridor or the addition of a protective shaft or false burial chamber, can be discerned, serving to picture the evolution of the tomb. Taking this plan as a basic criterion and following a chronological evolution, we can differentiate three main types.

TYPE I. After running at a right angle to the entrance façade, the corridor turns to the right, usually at a right angle. Such are the plans of the tomb of Amenhotep I, both tombs of Hatshepsut, and that of Ramses II. This right turn is already featured in the underground cenotaph of Senusert III and the neighboring one of Ahmose at Abydos. The corridor can be horizontal (Amenhotep I), or with inclined stretches (tomb I of Hatshepsut) as in the cenotaphs of Senusert III and Ahmose at Abydos. A new feature appears, however, in the shape of stairways cut in the floor of rooms, which are axial enlargements of the corridor, in the middle or in a corner (tomb II of Hatshepsut, Ramses II). This new feature is often used in the Eighteenth and Nineteenth dynasties (Thutmose I, III, Amenhotep II, Thutmose IV, Amenhotep III, Amenhotep IV, Ay, Horemheb, Seti I, Merneptah). It is not until the last pharaohs of the Nineteenth Dynasty that the corridor is again free of stairways (Ramses II, Amenemet, Seti II, Ramses III, IV, IX, X, XI, Setnakht).

TYPE II. The corridor penetrates for some distance at a right angle to the

entrance façade and turns counterclockwise to the left at a right angle (Thutmose I, III, IV, Amenhotep II). In the tomb of Thutmose IV the corridor turns twice to the left at a right angle, while in that of Amenhotep III it turns first to the left, then to the right, both at right-angle turns. Such right-angle turns in corridors had been in common use in Middle Kingdom pyramids, where they could have afforded intermediate rooms at every change of direction, with sliding portcullises carefully concealed in the ceiling, bringing the sarcophagus chamber back under the apex of the pyramid (so-called doubling-back). No such aim is apparent, however, in the royal tombs of the Eighteenth and Nineteenth dynasties. A protective device already initiated by Senusert III in his cenotaph at Abydos comes into use: a shaft ends the entrance corridor, and a blocked-up doorway in the opposite wall, concealed under a layer of plaster painted with scenes, leads to the second part of the funerary apartment (Amenhotep I, Thutmose III, Amenhotep II, Thutmose IV, Amenhotep III, Horemheb). This shaft again disappears with Seti I, who replaces it with an antechamber. The axis of the part beyond this point is sometimes slightly offset from that of the front part (Seti I, Ramses III).

The sarcophagus chamber in the tombs of Thutmose I and II assumes a plan of rectangular shape with rounded corners and a ceiling imitating a blue sky with yellow stars, perhaps picturing the oval shape of the world as in the hieroglyph  *shen*, or that of the cartouche enclosing the royal name. ⁴⁴⁵ One side chamber (to develop into four side chambers) was intended for the statues. Later it becomes a rectangular room with six pillars, preceded by a vestibule with two pillars and connected by a short corridor (Amenhotep II, Thutmose IV, Amenhotep III, Horemheb). These are occasionally enlarged into a vestibule (four pillars) and a sarcophagus chamber (six to eight pillars; Ramses II, Seti I, Setnakht, Ramses III).

A subsidiary room appears behind the sarcophagus chamber in the tomb of Amenhotep III. This, later, assumes the shape of a deep recess in the rear wall of the sarcophagus chamber, recalling the plan of the funerary apartment in the rock-cut tomb of the Middle Kingdom in Upper Egypt.

TYPE III. The corridor is straight and usually at a right angle to the entrance façade. The first to initiate this simple plan was Amenhotep IV-Akhenaten in his tomb at 'Amarna, probably to let the rays of the sun disk illuminate the whole length of the corridor. The shaft also disappears. It is this straightness in

the corridor which induced the Greeks who visited these tombs at the beginning of our era to call them "syringes" or "shepherd's pipes." This straight plan was retained even after Horemheb had returned to the old traditional type (Ay, Ramses I, Merneptah, Siptah, Seti II, Ramses IV, VI, VII, Setnakht, Ramses IX, X, XI) (pl. 62).

Closely related to this plan, but with a slight shift in the axis of the corridor, are the tombs of Horemheb, Seti I (copied from it), and Ramses III. It has been propounded that the first part of the corridor was dedicated to the sun god, on the grounds that the sun's rays enter the first part, that it seems to represent the course of the sun in daytime, and that this part was named "Corridor of the way of (the sun god) Shu."⁴⁴⁶

THE DECORATION OF THE ROYAL TOMB, ITS EVOLUTION AND STYLE⁴⁴⁷

The scenes on the walls of the corridor and rooms are almost exclusively religious. Only rarely do such scenes as that of the hunt for birds (Ay) or those representing the royal armory, treasury, and the sacred fields (Ramses III, three sides, chamber near entrance), appear. The scenes show Pharaoh with the gods and illustrate three main groups of texts or "books," and at least two minor ones. In no tomb, however, are all the books pictured completely.

In the tomb of Thutmose I appears the "Book of what is in the Netherworld" (*Amdwat*), representing the Netherworld as twelve regions, corresponding to the twelve hours of the night. In each of these the sun god is depicted as a ram-headed deity standing in his boat and sailing on the river of the underworld, bordered with genii and monsters.

Beginning with Thutmose III the "Sun Litany" occurs in the first corridors. In the Nineteenth Dynasty appears the "Book of Gates," a collection of texts and scenes depicting the journey of the sun through the twelve regions of the Underworld, each represented as separated from the next one by gates guarded by serpents.

At the same period and together with all the other texts appears the "Book of Opening the Mouth," which gives the ritual performed before the deceased so that he may regain the use of his senses. The "Sun's Journey through the Underworld," a book that is in use in the Nineteenth Dynasty,

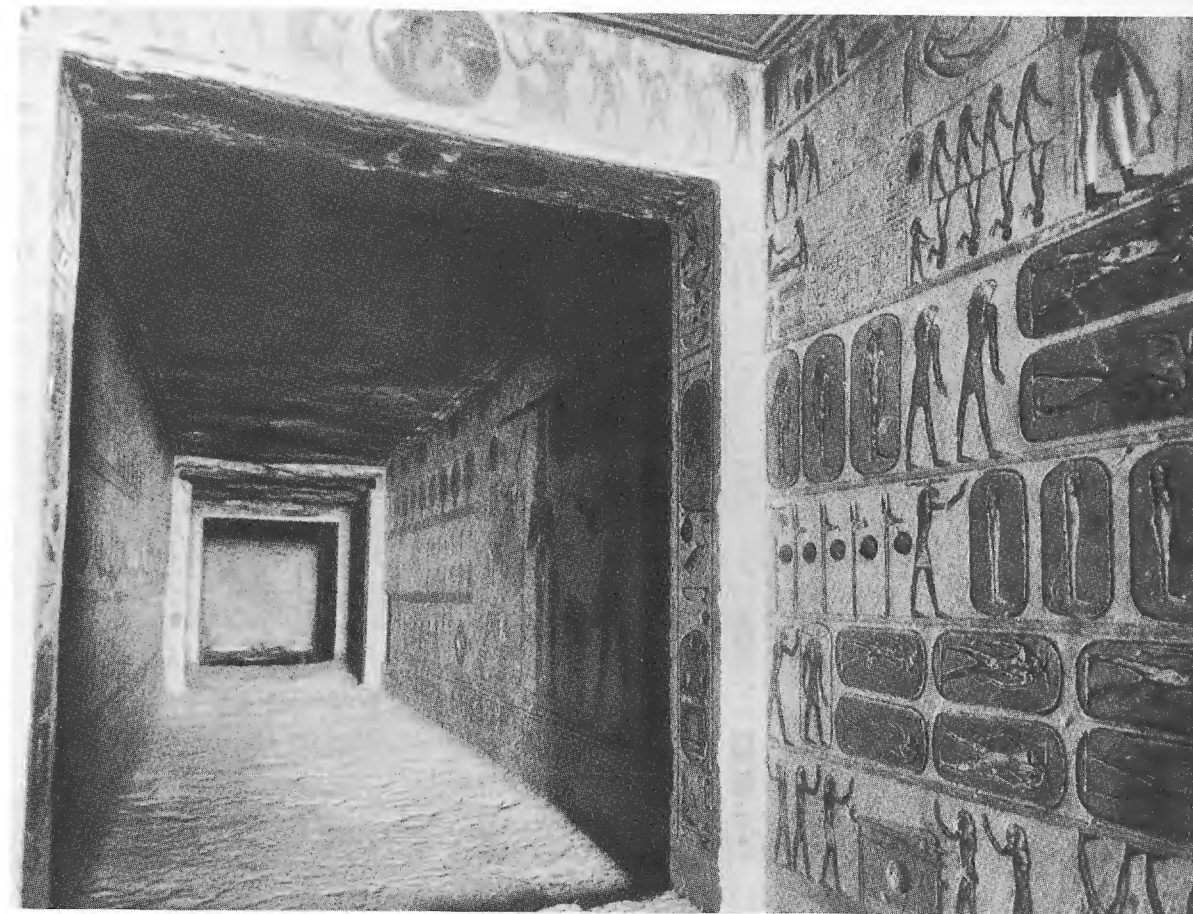


Plate 62. Tomb of Ramses IX.

represents the sun addressing the genii of the Underworld. The old "Book of the Dead" is also made use of.

The distribution of these various books on the walls follows some specific rules. The "Sun Litany" occurs in the Nineteenth Dynasty tombs in the first or second part of the corridor. On the four faces of the pillars Pharaoh is represented before a deity. The "Book of What is in the Netherworld" is on the walls of the sarcophagus chamber during the Eighteenth Dynasty, but no longer has a fixed place during the Nineteenth Dynasty. It is to be noticed that neither this book nor the "Book of Gates" and the "Book of Opening the Mouth" ever occurs near the entrance.

In the Eighteenth Dynasty the scenes are only drawn in outline on a white or yellow ground as if the walls were enlarged from the illuminated sheets of a funerary papyrus. Beginning with Amenhotep III the scenes, and from Horemheb, both scenes and texts are treated as murals finished in a style akin to that of the wall reliefs (pl. 62). There are besides some exceptional lay subjects represented in the murals of royal tombs in Western Thebes such as bird hunt (Ay) and royal kitchens, workshops, treasuries, and armories (lateral chambers Ramses III).

DESCRIPTION OF ROYAL TOMBS

Eighteenth Dynasty

THUTMOSE I (No. 38). The architect Ineny boasts about having directed the work on the tomb of Thutmose I. It is the earliest and smallest in the necropolis, consisting of an antechamber from which a stairway descends to a hall with rounded corners, perhaps representing the world, and with a ceiling supported by a central pillar. The sarcophagus was put in this hall, while the canopic jars had a special small recess cut in the side wall. The walls were stuccoed and painted (fig. 212).

HATSHAPSUT. This queen had two tombs, the first one presumably prepared while she had not yet attained the uncontested sovereignty of Egypt. This is a small tomb cut high in the cliff in a lonely valley and is practically inaccessible. The plan is simple, with one sloping corridor turning from a square chamber at right angles into a short and steep passage leading to a

square chamber (fig. 212). The sarcophagus found there was still to be lowered down a ramp to a sarcophagus chamber. The work was left unfinished.

The second tomb (No. 20) was prepared in the Valley of Kings and consists of a long inclined corridor (700 ft. [212.96 m.], descending 318 ft. [96.93 m.] deep) on a semioval course. It passes through two halls with axial stairways and a third one with a stairway at an angle, descending into the sarcophagus chamber. This is a rectangular hall directed N.-S., with three pillars and three side chambers. The sarcophagi of Hatshepsut and of her father Thutmose I had been placed in it.

THUTMOSE III (No. 24). With the tomb of Thutmose III appears the regular type of plan in the Eighteenth Dynasty, embodying an axial change of direction at a right angle, a shaft for protection against robbers, and four side chambers adjoining the sarcophagus chamber. The three-part corridors end in a shaft and on the opposite wall opens the antechamber, irregular in plan with two pillars and a stairway descending to the sarcophagus chamber (N.-S.), similar in shape to that of Thutmose I, but having two pillars instead of one, and four side chambers. On the walls are texts from the "Book of What is in the Netherworld," and on the pillars representations of the pharaoh with his mother Eset in a boat, or with his wives (fig. 212).

AMENHOTEP II (No. 35). This plan is similar to that of Thutmose III, but more regular, with truly rectangular rooms and a right-angle change of direction. A room opens from the bottom of the shaft. Could it have been intended as a false burial chamber? The sarcophagus chamber (N.-S.) has six pillars, and a kind of crypt cut in its rear contains the sandstone sarcophagus.

THUTMOSE IV (No. 43). The right-angle turns are here twice to the left, so that the plan recalls the "doubling-back" plan of funerary apartments in some of the pyramids in the Middle Kingdom.

The shaft is at the end of the first part of the corridor, and the second part joins the vestibule or antechamber, with two pillars, to a second smaller one, itself connected to the sarcophagus chamber (fig. 212).

AMENHOTEP III (No. 22). This tomb is located in the Western Valley of the tombs. The plan shows two turns at a right angle, the first to the left, then to the right. The first part of the corridor, as far as the shaft, is divided by doorways into three sections (fig. 212). The second part of the plan is similar

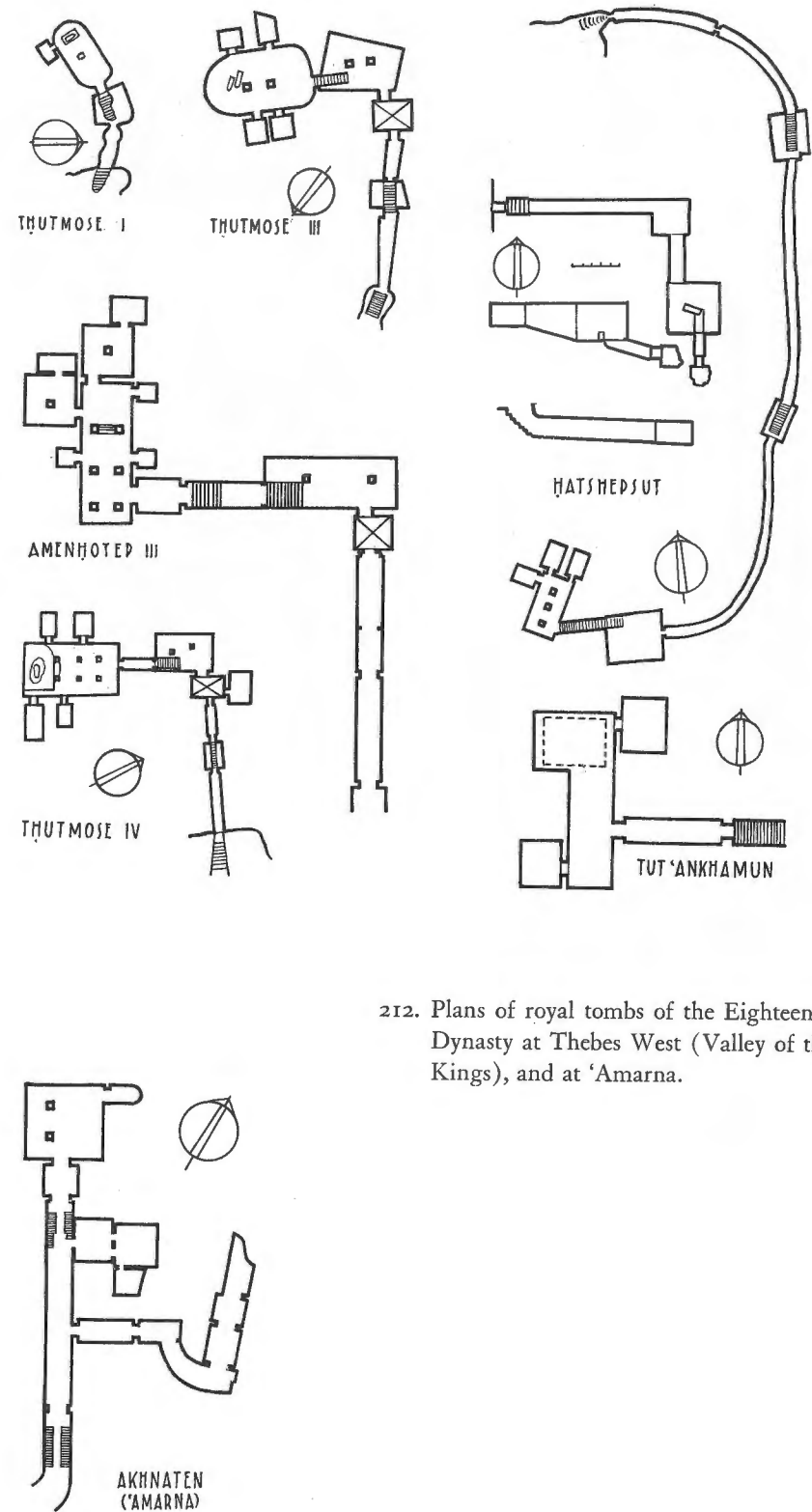
to that of Thutmose IV, having an antechamber with two pillars, two stairways, and a second antechamber. A new feature, which occurs here for the first time and which becomes a customary one in the Ramesside type of tomb, is the room with one pillar placed behind the sarcophagus chamber.

AMENHOTEP IV-AKHENATEN. With this pharaoh, who changed his religion and built a new capital in the desert, came a radical change in the plan of his tomb at 'Amarna (East). The corridor runs along a straight axis directly to the sarcophagus chamber, without any shaft. It seems that the pharaoh, who had raised the sun disk to the place of the Only God, wished to benefit, even after death, from the rays he used to worship. This straightness of the plan is henceforth a constant feature of the royal tombs. Two subsidiary apartments open on one side of the corridor. The first is an undecorated corridor, divided into six parts and following a turn along a quarter of a circle (fig. 212). The second is a group of rooms, two of which are decorated with realistic scenes, some showing the pharaoh and the queen mourning at the death couch of their little daughter Meketaten, who was buried in this apartment. The mummy of the pharaoh, however, was found in the tomb of his mother Tiy (No. 55).

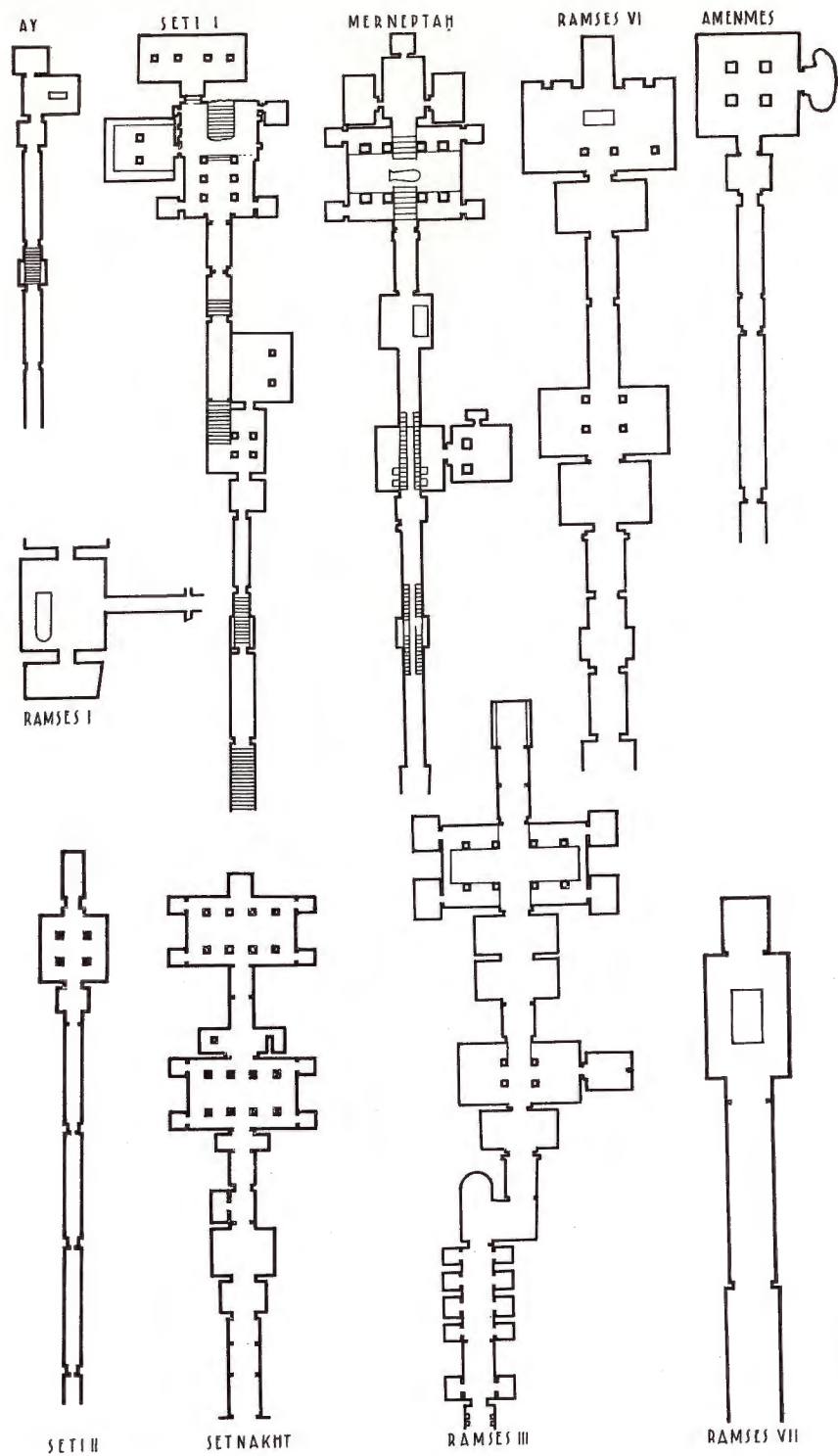
TUT'ANKHAMUN (No. 58). This rock-cut apartment in the Valley of the Kings, famous for its rich funerary equipment, was nothing but a cachette, probably hastily prepared, and was hardly a tomb. Its plan has nothing to do with the traditional program, consisting of a corridor leading to a large transverse room (N.-S.), connected at its north end with a second large room containing the four huge shrines of gilded wood set over the sandstone sarcophagus, which contained two wooden coffins and a gold one with the mummy. A wall was built between the two main rooms. A square subsidiary room branches off from each of them. The walls are decorated with hastily painted scenes of funerary purport (fig. 212).

AY (No. 23). The plan of this tomb in the Western Valley shows the influence of 'Amarna in having a straight axis, no shaft, a sarcophagus chamber set transversely, and a rear chamber behind it (fig. 213).

HOREMHEB (No. 57). Although retaining the straight axis, the tomb differs owing to the shaft sunk in the corridor, which proceeds along an axis parallel to the first one, but offset. Three stairways intercept the corridor, and the



212. Plans of royal tombs of the Eighteenth Dynasty at Thebes West (Valley of the Kings), and at 'Amarna.



213. Plans of the royal tombs of the Nineteenth and Twentieth dynasties at Thebes West.



COLOR PLATE XIIIa. Papyrusform capital from the hypostyle hall of the Great Temple of Amun-Re' at Karnak (see p. 370). Nothing from the earlier type of plant column subsists except the outline. The elements of the original open papyrus flower are strongly stylized in the shape of triangular leaves striped in fanciful colors allied to lotuses and cartouches. The five bands beneath the capital are borrowed from the column of bundle type.

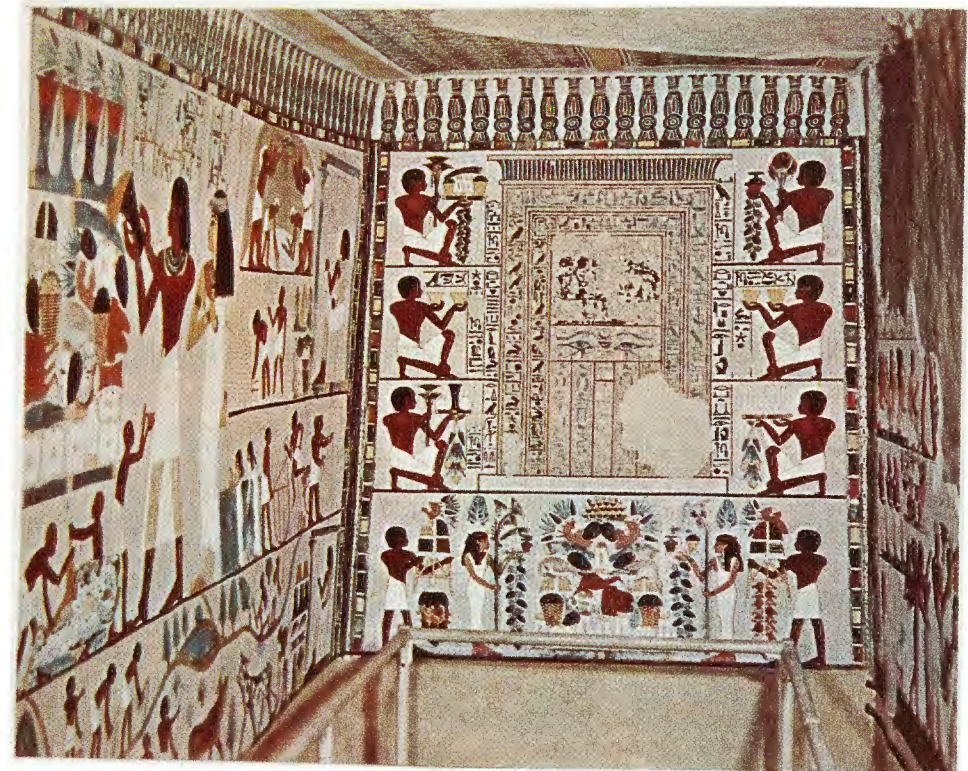


COLOR PLATE XIIIb. Engaged cluster column from the mortuary temple of Ramses III at Medinet Habu (see p. 470). This type of cluster column in imitation of wooden ones consists of a bundle shaft surmounted by a capital of half-blown lotus, out of which rises a smaller capital of open papyrus, surmounted by an iris or lily capital with two volutes. Such columns in wood with staged capitals, stuccoed and painted, which formed elegant kiosks, are commonly represented in the murals of Theban tomb chapels.



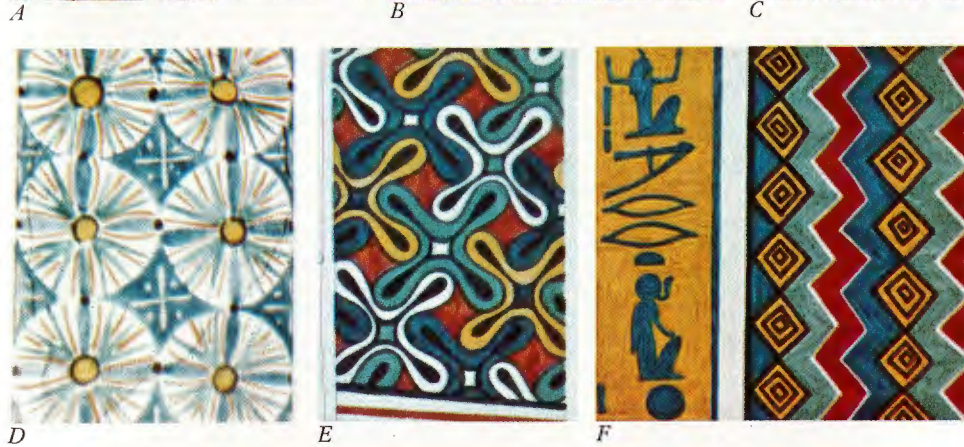
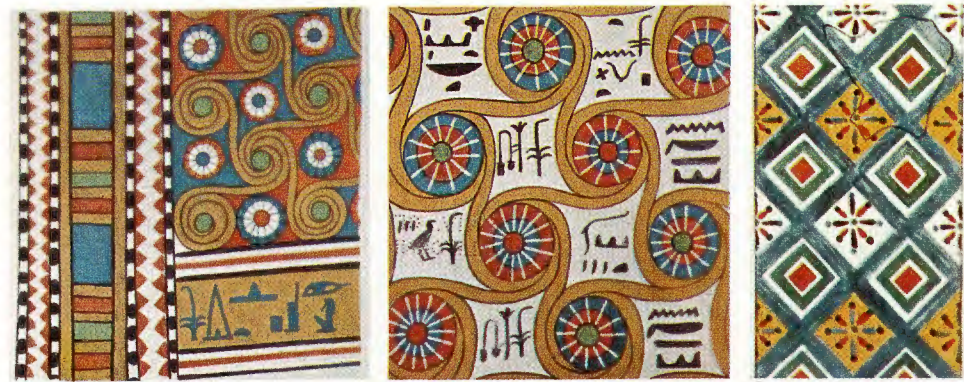
COLOR PLATE XIII. *View of the Ramesseum in Western Thebes (see p. 394).* In the left foreground are the bud columns still standing in the north colonnade of the second court, and opposite the four Osiride pillars. Beyond are the great hypostyle hall with some of its clerestory windows, and what remains of the smaller columned halls. In the distance the pyramid-shaped peak El Qurn, which was worshiped, was probably imitated in the pyramid-topped mortuary temple of Mentuhotep at Deir el Bahari and in the smaller pyramid chapels of the Empire.

COLOR PLATE XV. *Restored copy of the entrance to the north chamber from the hall of the tomb chapel of Puyemre' (No. 39) in Western Thebes (see p. 410).* Puyemre', a priest of Amun in the reign of Thutmose III, has left a tomb chapel with many fine painted reliefs that could be restored. This interesting painting by N. de G. Davies shows a treatment of the typical doorway painted in imitation of black granite with the traditional tracery of the djed-sign for "stability" and the double papyrus stems for "unification" in the transom.



COLOR PLATE XIV. *Murals in the southwest half of the broad hall in the tomb-chapel of Nakht (No. 52) in Western Thebes (see p. 409).* Nakht, a priest of Amun and official who lived at the beginning of the Eighteenth Dynasty, has a small tomb chapel consisting of the typical broad hall and deep hall from which a shaft descends to the burial chamber. All the walls cut from the rock are plastered and painted. The small end of the broad hall is half covered with the painting of a false-door imitating pink granite. On its tablet are depicted Nakht and his wife at meal. On either side of the false-door are three figures on their knees making an offering. Beneath is a heap of offerings flanked by a tree goddess and a servant. On the south wall left of the entrance are scenes in four registers representing work in the fields and the deceased and his wife on a heroic scale, sacrificing. A band of colored rectangles derived from the torus molding frames each wall composition, surmounted by a frieze of kheker running just beneath the ceiling, itself decorated with geometric patterns.





COLOR PLATE XVI. Patterns of ceiling paintings from tomb chapels in Western Thebes (see p. 410). To the repertory of ceiling patterns in use during the Middle Kingdom new forms were added, being either (a) derivatives from the earlier linked spirals with rosettes (Huy), (b) spirals enclosing rosettes with groups of hieroglyphs (Huy), (c) squares, or (d) original designs such as the rayed flowers, (e) the quatrefoils in kaleidoscopic array (Amenemhat), and (f) the zigzags (Amenemhat). In all cases, however, the composition is based as before on a square grid superimposed on a diagonal one. Over the nave in hypostyle halls and tombs the motif consists of (g) a row of vultures with outstretched wings.

typical features of the pillared antechamber, the second antechamber, the sarcophagus chamber with six pillars and a crypt, backed by a subsidiary rear chamber, all reappear. The upper part of the shaft is entirely covered with decoration, even that area occupied by the blocked-up doorway to the antechamber, obviously to hide it from robbers.

Nineteenth Dynasty

RAMSES I (No. 16). During his short reign of two years this pharaoh could not prepare an elaborate tomb. This has only a corridor, intercepted by two flights of steps, leading to a sarcophagus chamber set axially and having a room at either end (fig. 213). The painted scenes represent various episodes from the funerary books.

SETI I (No. 17). The plan is remarkably similar to that of Horemheb, but without the shaft and with the addition of a hall behind the pillared antechamber. Among the characteristics are the large pillared room, set as a substitute to one of the four angular rooms branching off the sarcophagus chamber, and the transverse hall with four pillars instead of the rear room in the typical plan. The decoration shows scenes from the Netherworld in the same fine style of low relief apparent on the other monuments of that reign (fig. 213). The vault above the crypt is decorated with astronomical scenes. Some of the drawings on the pillars in the hall have never been finished and show corrections in black.

RAMSES II (No. 7). The plan is of the Eighteenth Dynasty type, turning at right angles just before the eight-pillared hall. The corridor is divided into six parts by doorways and passes through a four-pillared antechamber, from which a four-pillared square chamber branches off. The crypt seems to have been separated from the sarcophagus chamber.

MERNEPTAH (No. 8). The planning of this tomb shows a remarkable mastery. It is nearly symmetrical, with a straight corridor running in the form of a stairway through a first room, the antechamber, and opening axially into a transverse sarcophagus chamber (N.-S.) with eight pillars separating the nave from the two aisles. The nave is roofed over with a flat vault and the aisles are covered with ceilings. There is a small room at each of the four corners. The lid of the sarcophagus is in the shape of a cartouche. The crypt assumes here a

cruciform shape, having a central hall with two side chambers and a small room opening from the rear wall (fig. 213). The simplicity and symmetry of the plan must surely have inspired the plans of later Ramesside tombs.

AMENMES (No. 10). The tomb was never completed, and the plan consists of a straight corridor, a small antechamber, and a hall with four pillars (fig. 213).

SIPTAH (No. 47). The plan is a straight corridor, sloping in certain parts, running through the pillared hall to a second incomplete chamber.

SETI II. The plan is similar, but incomplete. It features a straight corridor divided by several doorways which runs to a small antechamber and a pillared hall (fig. 213).

SETNAKHT (No. 14). This was to be the tomb of Queen Tausert, and the plan, which was complete with the usual corridor, a chamber, hall, antechamber, sarcophagus chamber with eight pillars and four subsidiary rooms, and a transverse chamber, was enlarged by the addition of a second sarcophagus chamber identical to the first one, with a niche in its rear wall (fig. 213).

Twentieth Dynasty

RAMSES III (No. 11). This important tomb shows two main characteristics: the entrance corridor has five niches for funerary furniture in either side wall, and the axis is shifted to the side beyond this first part (fig. 213). The refined architectural treatment of the butt end is noteworthy: the corridor continues for a certain length in its first direction and is then rounded off into some kind of semicircular niche, covered with a vault. The plan presents the usual sequence of chambers: chamber, hall with four pillars and a side chamber, two transverse rooms, a large sarcophagus chamber with eight pillars and four subsidiary rooms, and a short corridor leading into a rear chamber.

RAMSES V (*usurped by Ramses VI*; No. 9). The plan shows the complete sequence of rooms set axially. In the sarcophagus chamber the four subsidiary rooms are lacking, but in the rear wall are cut one large central niche and four small ones. The scenes in sunk relief, which represent elements from the funerary books, are well preserved but are not so beautiful as those of the Nineteenth Dynasty.

RAMSES VII (No. 1) AND RAMSES X (No. 18). These are only small projects featuring a corridor and a small sarcophagus chamber each (fig. 213).

RAMSES XI (No. 4). The plan has kept only some of the elements of the usual program: a short corridor leads to a transverse room, a hall with four pillars, and a second hall with two pillars and two pilasters. The project was never completed and a shaft was sunk in the floor of the rear hall.

THE TOMBS OF THE QUEENS. The queens had their tombs in a separate valley called by the Egyptians "The Place of Beauty" (*ta set neferw*), now known as *Biban el Hareem*, to the southwest of that of the pharaohs and about 2 kilometers northwest of the temple of Medinet Habu. Members of the royal family were buried there ever since the Seventeenth Dynasty, but the most important tombs are the Ramesside. The tomb of Queen Nefertari, wife of Ramses II, is famous for its magnificent paintings. The typical plan is a simplified version of that of the tombs of the pharaohs, showing an antechamber and a sarcophagus chamber with two (tomb of Dwatenoet) or four pillars (tomb of Nefertari), and sometimes two subsidiary chambers, with very short corridors between the chambers.

The decoration upon stucco has kept its brilliant colors and shows the deceased in the presence of deities, or sacred cows and bulls, as well as chapters from the Book of the Dead.

THE PRIVATE TOMBS

The tendency toward the general use of the rock-cut tomb, which had originated at the end of the Old Kingdom and had developed in the Middle Kingdom, now reaches its height. The inadequacy of the isolated tomb with a superstructure to be guarded against tomb robbers had long since been proved. Rock-cut tombs could only be entered through the front entrance and were not exposed to the harmful effects of atmospheric factors.

The decentralization of rule in the early Middle Kingdom had led to a growth of provincial necropolises, consisting mostly of tombs of nomarchs cut in the cliffs above their own city. It was only the establishment of a centralized government at Thebes that could induce the grandees to make their last resting-place in the Theban necropolis. The pharaohs had decided in favor of

the western bank, and their courtiers followed.

The type with the mastaba superstructure was maintained in flat country, as at Abydos and Qaw. It occurred together with the isolated pyramid at 'Aniba (Nubia). But the rock-cut tomb was universally favored even in provincial necropolises (El Kab, Kom el Ahmar) and as far south as Lower Nubia (tomb of Nakhtmin). Certain tombs have no superstructure and are cut as underground apartments (Gurob, Sedment). The ephemeral 'Amarna era also favored rock chapels similar to those at Thebes.

In the rock tombs there is no more need for the ingenious and sometimes extremely intricate architectural devices used against tomb robbers in the pyramids of the Middle Kingdom. Some new devices occur, however, in royal tombs in the form of false pits and false chambers. Simple devices such as blocking the bottom of the shafts in underground apartments are still current at Abydos and 'Aniba.

THEBES ⁴⁴⁸

It was natural that the capital Thebes would have the most important necropolis of that period. It lay opposite the city, on the western bank and fronting the cliff. There the grandees prepared their eternal resting-places in the form of elaborate and well-decorated tombs and chapels cut in the rock. Common people were buried in modest graves amid the larger tombs, down to the valley.

Six main groups can be noticed in the necropolis: Dra' abul Naga, 'Assassif, El Kokha, Sheikh 'Abd el Gurna, Qurnet Mar'i, and Deir el Medina, the cemetery of the artisans of the royal tombs. Most of the tombs date from the Eighteenth to the Twentieth dynasties.

The typical Theban tomb for private citizens, except at Deir el Medina, consists of a rock-cut chapel and an underground chamber, much like the rock tombs of the Middle Kingdom.

The chapel reproduces the main elements of the contemporaneous house. At the rear of a court, partly cut in the rock on a square plan, a central doorway opens onto a transverse hall imitating the "broad hall" (*wsekhet*) or hall of audience in the palace, or the reception room in the private house. The external aspect of the superstructure of the tomb, with its portico, stelae

flanking the doorway, and frieze of cones and pyramid, can be pictured from the numerous representations found in the tombs themselves. Directly connected to the broad hall, a long, often narrow, hall runs axially deep into the rock. At the rear of this deep hall is a small shrine or naos having at its back a niche for the statue of the deceased. This element, already known in the Middle Kingdom rock tomb, was the place where the funerary cults were performed and corresponds to the dining room or private apartment in the private house.

As in earlier tomb chapels the walls are covered with scenes, some in relief but most in painting, contributing to the double function: providing accommodation for the mummy correlated to the funerary ritual performed, and provisioning the everlasting entity of the deceased so that he may relive the best spells of his earthly life. The distribution of the two groups of scenes follows a certain pattern: worldly themes in the broad hall, and religious ones in the deep hall and shrine. The tomb of Nakht (No. 52) from the reign of Thutmose IV may be regarded as a specimen for the thematic distribution of scenes. On one entrance doorjamb the deceased stands, directed toward the east, worshiping the rising sun, and on the opposite jamb he strides west praying to the setting sun. On the east wall of the broad hall, south of the entrance doorway, are scenes of the funerary banquet (Rekhmire', Amemopet), or work in the fields (Nakht). On the same wall, north of the doorway, appear workshops with craftsmen in metals and chariots (Puyemre'), jewelry and carpentry (Nebamun and Ipuky), painting and carving, brewery and bakery, or ceramics and leatherwork.

On one end wall of the broad hall there is a false-door (Nakht; see color plate XIV), and on the opposite wall, a stela ('*aba*) with a biographical inscription.

On the west wall of the broad hall there appears on either side of the door to the deep hall a scene of the pharaoh seated in state receiving the tribute brought by the various peoples of the Empire accurately depicted with their ethnic characteristics and exotic garb (Puyemre'), or the pharaoh or the deceased supervising a troupe parade (Userhat), or fishing and hunting scenes (Menna), or vine growing.

The religious wall scenes in the deep hall represent on the south the pilgrimage to Abydos (Menna), the funeral and offering, and on the north the rite of "opening the mouth" of the mummy (Khons), the funerary repast, and

occasionally hunt scenes (Kenamun).

The walls of the shrine depict funerary rites and lists of offerings, except for the west rear wall where the deceased is represented in painting or sculpture, accompanied by the deities of the necropolis.

The ceilings (color plate XV) are painted like those of the houses with geometric patterns of an extravagant richness featuring rosettes, quatrefoils, and spirals combining with the grids and zigzags derived from mat-, textile-, or leatherwork within a frame of balks (Nakht). Doorways form other pretexts for painting elaborate frame and transom windows (Puyemre'; color plate XVI).

These colored murals covering all the walls and ceilings of a relatively small chapel convey a forceful impression. Their style evolves in its design and colors from registers of independent figures in a clear outline filled in with flat spreads of bright colors on a light ground during the early Eighteenth Dynasty, to a composition in groups of related figures in dazzling colors modeled with hatching about the middle of the dynasty, and finally to a more refined composition with emphasis on movement and third dimension in flamboyant colors on a whitish ground.

Murals of Ramesside tombs deal increasingly with themes of the Netherworld treated at first with a repertory of forms enriched from 'Amarna, but soon debased as to technique, design, and composition to an unsystematic composition with profuse detail on a dull yellow ground.

Several individual changes in the typical layout of the chapel occur from the Eighteenth to the Twentieth Dynasty. Large massive columns may carry the roof of both halls (Ra'mose, Serer), and a square room may be introduced between the deep hall and the shrine (Tjoy), sometimes with columns (Serer). This square room with four pillars occasionally replaces the shrine, which is then reduced to one or more niches in the rear wall (Sennufer), or to a naos (Huy, Userhat), while the deep hall is reduced to a short passageway or even disappears.

Later, during the Nineteenth Dynasty, this square room assumes again the shape of the deep hall with pillars and a shrine opening at its back (Pesiur, Pennesuttawy, Nebunenef). Another new feature of the Nineteenth Dynasty type is the setting of two side porticoes running along the sides of the court (Ipy, Tjoy). The purpose of such side porticoes, allied to that of the rows of columns or pillars in the deep hall, sometimes enhanced by the series of

doorways opening in the nave and the two aisles, could have been to stress the longitudinal axis ending at the main element of the chapel, which was the shrine at the rear. Such a purpose is obvious in the Middle Kingdom rock-cut tombs where it had been carried out quite skillfully through several devices: the rows of columns on both sides of the longitudinal axis, the direction of the architraves parallel to the latter, and the central pathway sunk in the floor. The imitation of features from the royal monuments was not limited to the use of columned porticoes (Hapuseneb, Ineny, Ahmose) or the pyramid, which had fallen into disuse in royal tombs since the end of the Middle Kingdom, but was also reflected in the plan of a terrace at the rear of the court to which a stairway ascends (Amenhotep, Senmut, and his brother Senmen). This was doubtless inspired by the terraces in the temple of Queen Hatshepsut.

The underground apartment consists of one or more chambers beneath the chapel, accessible through a ramp or a shaft opening in the court.

Typical Examples of Private Tombs at Thebes (fig. 214)

REKHMIRE' (No. 100). A central doorway opens in the façade of the court into a broad shallow transverse hall, itself connected by a second doorway opposite the first with a deep narrow hall in the nature of a passage. Its ceiling is sloping so that it attains a considerable height at the rear wall; and a niche, once blocked up with a granite false-door and containing the statue, opens about 18 feet [5.49 m.] above the floor. In the remarkable painted decoration, Rekhmire' aimed at representing his various activities during his successful life as vizier under Thutmose III and Amenhotep II. In the transverse hall he is seen receiving petitions and tribute from foreign people from Punt, Crete, Nubia, Syria, and the South. In the deep hall he supervises the receipt of the temple income, artisans, and builders, or sits eating a meal and listening to musicians and singers.

RA'MOSE (No. 55). The plan is of the simple type, but both the broad hall and deep hall have massive columns cut from the rock. In the broad hall sixteen columns rise in four rows on either side of the central pathway, while eight papyriform bundle columns in two rows rise along the deep hall. At the end is a small unfinished room with a niche in each of the three walls. The decora-

tion consists of scenes in beautiful low relief in the style of Amenhotep III and other scenes in the realistic style initiated by Amenhotep IV (scenes of the pharaoh and queen at the window of appearance; mourning women). A shaft descends from a corner of the broad hall to the sarcophagus chamber. Ra'mose never finished this huge tomb and had another prepared near the new capital of 'Amarna.

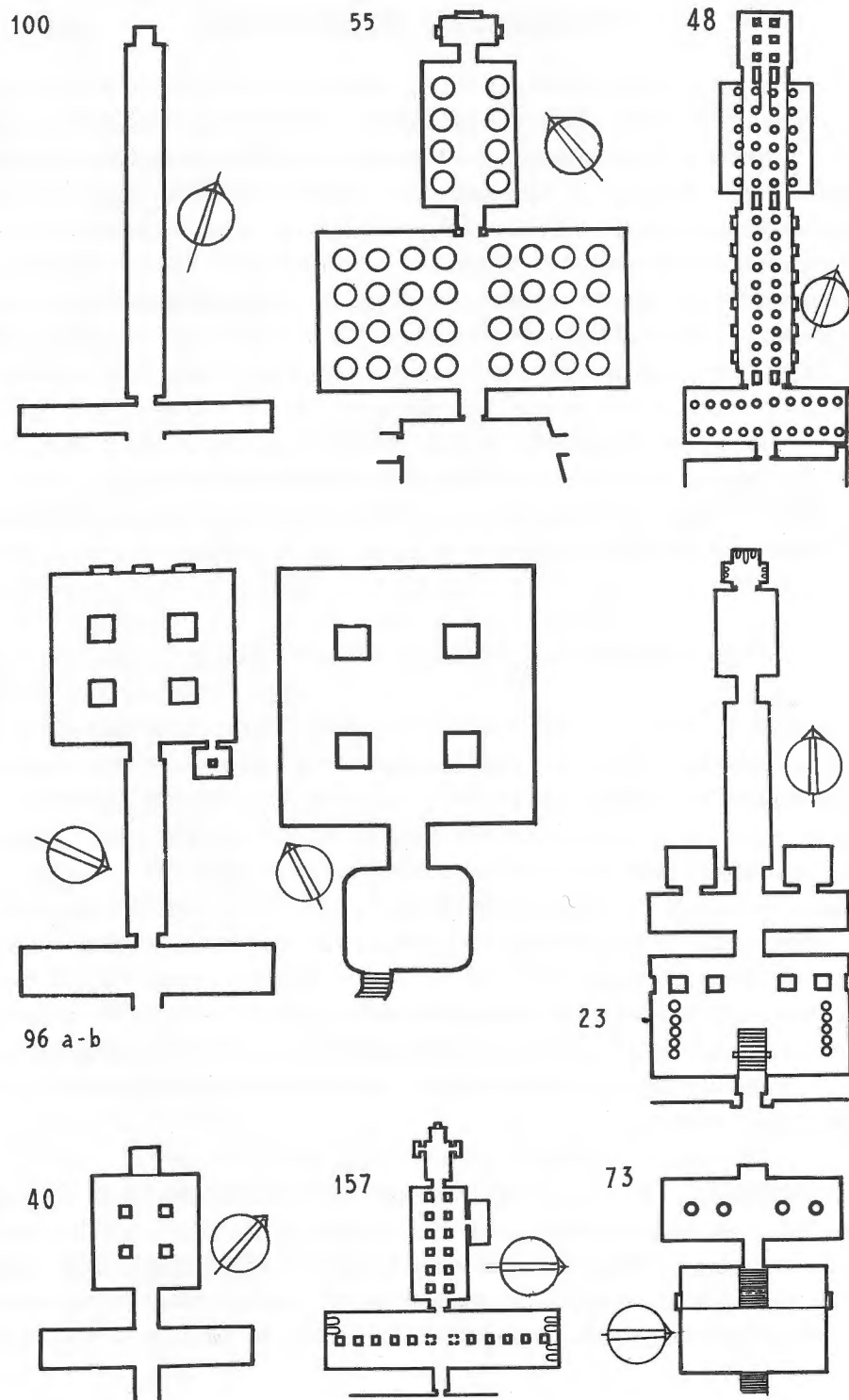
The central pathway flanked by rows of columns emphasizes the longitudinal axis passing through the shrine (cf. the design of Middle Kingdom private rock tombs, Vol. II, p. 195).

SERER (*No. 48*). Architecturally, this is the most important private tomb at Thebes and possibly in the whole of Egypt. It dates from the reign of Amenhotep III. Its plan features a squarish hall added between the deep hall and the shrine. The broad hall has two rows of ten fluted columns each, while the deep hall has two rows of ten bundle papyriform columns each. It is thus divided into a vaulted nave and two aisles, each of the side walls having six niches. It is noteworthy that three doorways open between the broad hall and the deep hall, corresponding to the nave and the two aisles. The squarish hall also has columns (24 in four rows) of the so-called tent-pole type, known only in the Festival Hall of Thutmose III at Karnak, perhaps recalling some jubilee festival of the pharaoh.

The rear chamber has two rows of three pillars, set in a line with the columns in both the squarish and the deep hall. The emphasis on the longitudinal axis is carried out by extensive use of rows of columns and the three sets of doorways opening transversely in a line between the various halls, thus affording an impressive perspective along the three axes.

SENNUFER (*No. 96*). The Mayor of Thebes and Overseer of the gardens of Amun under Amenhotep II was the first to introduce a new feature in the shape of a square hall with four pillars at the end of the deep hall. Three niches open in the back wall while a small room is connected by a doorway with the northeast corner of the square hall. The decoration represents the gardens of Amenhotep II and the deceased in a pavilion with his brother, the Vizier Amenemopet.

The substructure (*96b*) is reached through a steep stairway and consists of a square antechamber and a square hall (four pillars). The decoration is extremely interesting, being characterized by the use of vine branches and



214. Plans of private tombs at Thebes West.

grapes or network patterns to cover the ceiling left as undressed rock. Scenes represent the erection of obelisks, the pilgrimage to Abydos, and often the deceased with his wife and daughter.

AMENHOTEP, CALLED HUY (No. 40). This Governor of Kush during the reign of Tu'ankhamun left a tomb that shows a further evolution in the plan. The broad hall is connected to the square hall with four pillars by a short passage, while the deep hall and the rear shrine have disappeared. A niche is cut in the back wall. The decoration is interesting, with numerous scenes of Nubian chiefs, landscapes, tribute, a princess in a chariot drawn by oxen, vessels, and the fortress of Faras.

TJOY (No. 23). In the reign of Merneptah the Archivist Tjoy had a tomb built which embodied certain new features. The plan consists of a broad hall with two subsidiary rooms opening in its rear wall, a deep hall, a rectangular room evolved from the additional square hall, and a shrine with three half-statues of Osiris, Isis, and Horus in its rear wall. The court shows also an elaborate plan of a main portico with four massive pillars and antae along the front façade, and two side porticoes on a row of five columns along the small sides. Side porticoes in the court had already appeared during the reign of Ramses I, in the tomb of Ipy (No. 41), and formed a feature perhaps inspired from similar ones in the courts of the temples, aiming at emphasizing the central axis. The decoration contains some important scenes, particularly in the court: the royal chancery, the bandaging of mummies, and an ape attacking a goose.

NEBUNENEF (No. 157). The First Prophet of Amun in the time of Ramses II prepared a beautiful tomb showing the new feature, common under the Ramessids, of a central row of twelve pillars running in the broad hall. The deep hall is divided into three aisles by two rows of six pillars and is connected at its back to a rectangular chamber having a naos and two lateral cachettes.

AMENHOTEP (No. 73). This Chief Steward of Hatshepsut imitated in his tomb, as did the famous architect Senmut (No. 71) and his brother Senmen (No. 252), the terraces of the funerary temple of the queen at Deir el Bahari. A terrace occupies the back of the court, and a central stairway leads to a short passage opening into a broad hall with four columns and a shallow niche in the rear wall.

DEIR EL MEDINA

Although located on the western bank of Thebes this cemetery contains tombs of a peculiar type, both as to the superstructure and the substructure. This type of program probably resulted from the social conditions prevailing in this settlement of artisans and builders, "Servants in the Place of Truth" as they called themselves, in the Nineteenth and Twentieth dynasties.

Two very similar types of superstructures can be differentiated: a pyramid chapel and a rock-cut chapel with pyramid.

THE PYRAMID CHAPEL. On the outskirts of the valley or the lowest ranges of the cliff the typical chapel consists of a doorway and pylon, enclosed within some kind of funerary garden, such as is usually mentioned by the formula found at that period in the Book of the Dead. The deceased expresses the wish: "that I come in and go out of my tomb, that I drink water from my pond daily, that I walk around my pond daily, that my soul may rest on the branches of the trees that I have planted, that I may refresh myself under my sycamore-trees."⁴⁴⁹ Vignettes from the papyri show the soul on the branches of the tree or the deceased walking around the pond.

At the back of the court on a leveled area of the rock or on a brick podium rises a small brick pyramid with hollow interior roofed over by corbeling courses, with a steep angle of incline and a stone pyramidion, such as is commonly represented in contemporaneous Theban tomb scenes. On the eastern face a stela is set in an arched niche.

The interior of the superstructure consists of a vaulted chapel, the walls of which are decorated with paintings representing scenes of funeral ceremonies or the future life. In the rear wall a niche contains the statue of the deceased. The substructure, reached through a shaft or a stairway opening to the north of the court, consists of two or three rooms cut in the rock. The last one, set at a lower level, is roofed over with a brick vault and its walls lined with brick, plastered and painted with scenes of funeral ceremonies and vignettes from the Book of the Dead. This contains the sarcophagi of the family.

THE ROCK TOMB WITH PYRAMID. At the back of a court surrounded by a wall the façade of the tomb features a dressed rock wall, often shaded by a columned portico crowned with a cavetto cornice. A small brick pyramid with

hollow interior rises above the entrance doorway. A short corridor leads into a transverse hall connected with a second smaller room. In the rear wall a niche contains the statue or high-relief figure of the deceased.

The rooms of the superstructure, cut in the rock, form a more pretentious program than that of the pyramid chapel, and are similar to that of tombs in Qurna.

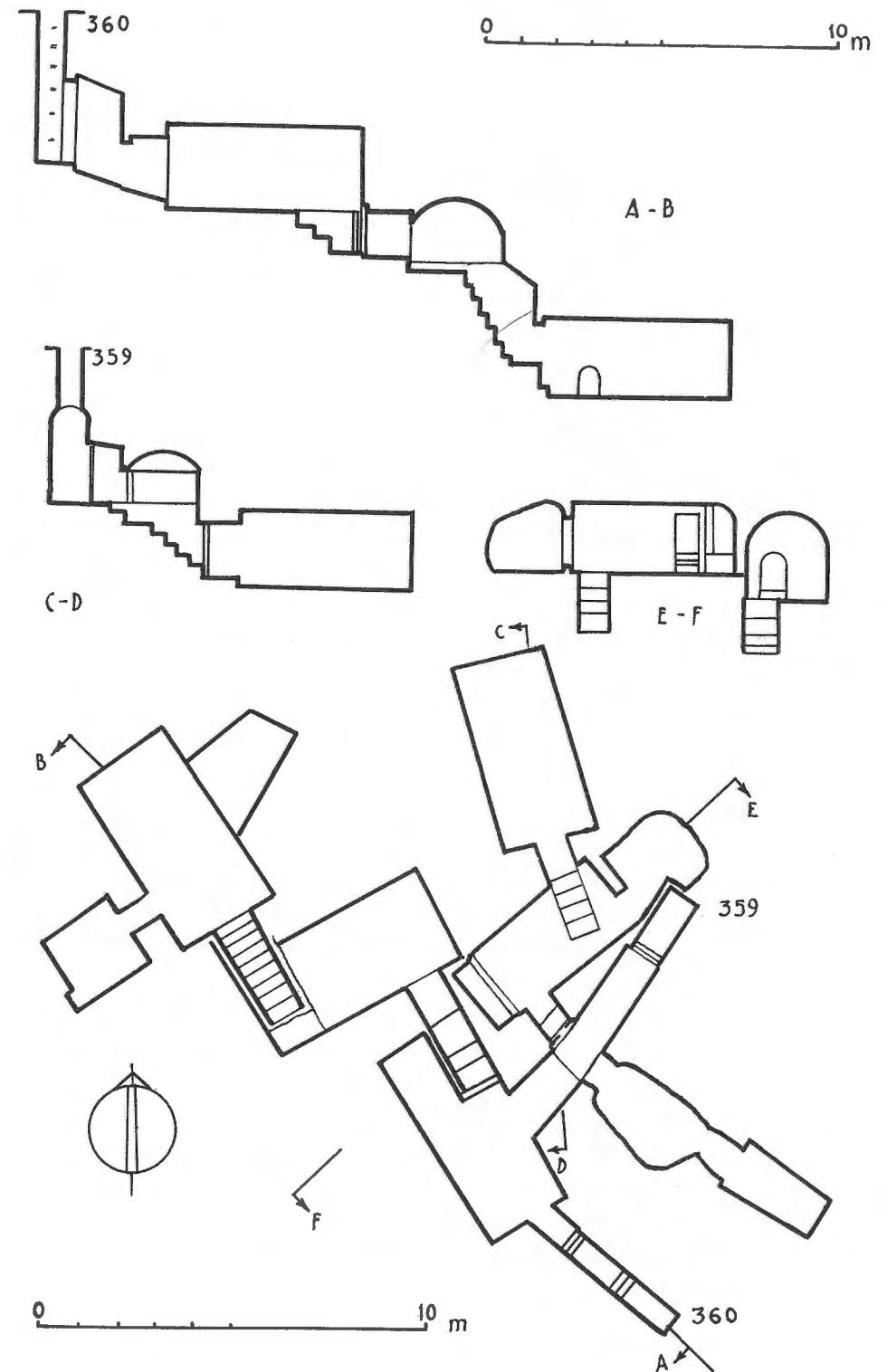
The substructure is identical with that of the pyramid-chapel type but is usually accessible through a shaft opening in the rear room.

Typical Tombs at Deir el Medina

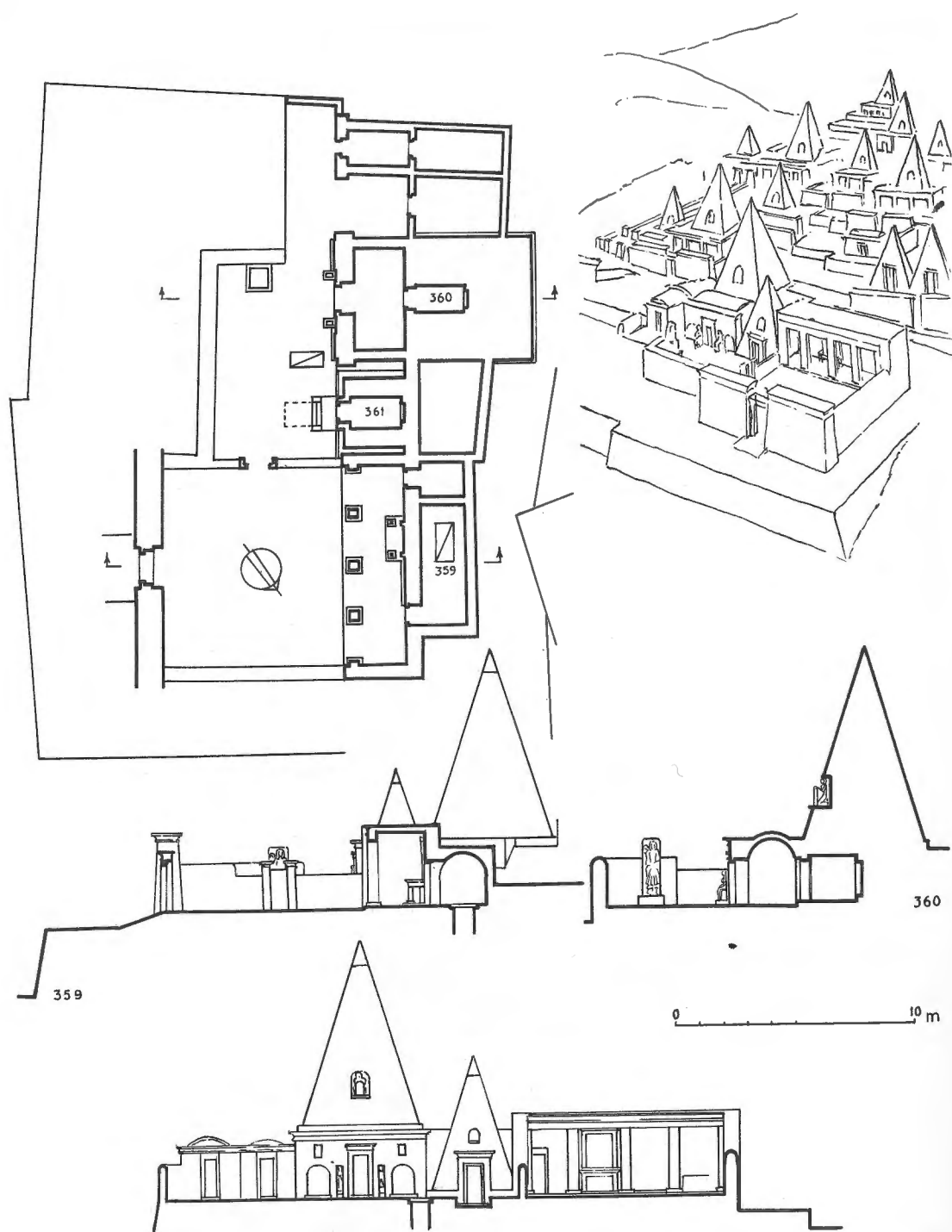
PYRAMID CHAPEL AND TOMB OF THE ARCHITECT ANHORKHAWY (No. 359).⁴⁵⁰ This tomb is closely connected to those of Qaha (No. 360) and Huy (No. 361), as their chapels are contiguous and their substructures intersect. The three chapels are set on a line N.E.-S.W. and each has a court to the east on a common artificial terrace surrounded by a stone retaining wall. They belong to three members of the same family: Huy (No. 361), his son Qaha (No. 360), who seems to be responsible for the building of chapel No. 359, and his grandson Anhorkhawy (No. 359). The last-named possesses a second tomb which he prepared after he had already finished the substructure in the grounds belonging to the family, presumably after being appointed to a higher post under Ramses III.

The earliest chapel, that of Huy (No. 361), is also the smallest. It consists of a pyramid rising from the ground and enclosing a narrow vaulted room, opening to the east and containing a stela on the western rear wall. The walls are painted with scenes (figs. 215, 216).

The chapel of Qaha (No. 360), contiguous to the south wall of that of Huy, is in the form of a pyramid rising from a high base, embodying the vaulted hall (4.1 x 2.05 m.), opening east through a doorway and two small windows. Two stelae probably flanked the doorway. The chapel is in brickwork, except for its western wall which serves as a retaining wall to the rock cliff and the pyramid above, which was also in stone (5 x 7 m. high) and had a niche in its eastern face containing a statue of Qaha kneeling and holding a stela in front of him. The walls of the hall were decorated with painted scenes of daily life (construction of a boat, gathering flax), or of a religious and



215. Plans and sections of tombs Nos. 359 and 360 at Deir el Medina.



216. Plans, sections, and restored perspective of the superstructures of tombs Nos. 359 and 360.

funerary nature. A naos cut deeply into the cliff in the main axis contained a stela and was decorated with funerary scenes. The plan is of the Theban type.

The chapel (No. 359), to the north of that of Huy, has a portico on three pillars with antae and two rooms opening at its rear. Two large stelae in painted limestone, one having a shelf on two front pillars, were set on the rear wall of the portico. No shrine or naos can be recognized in either room, but in the largest one a shaft opens to the tomb of Anhorkhawy.

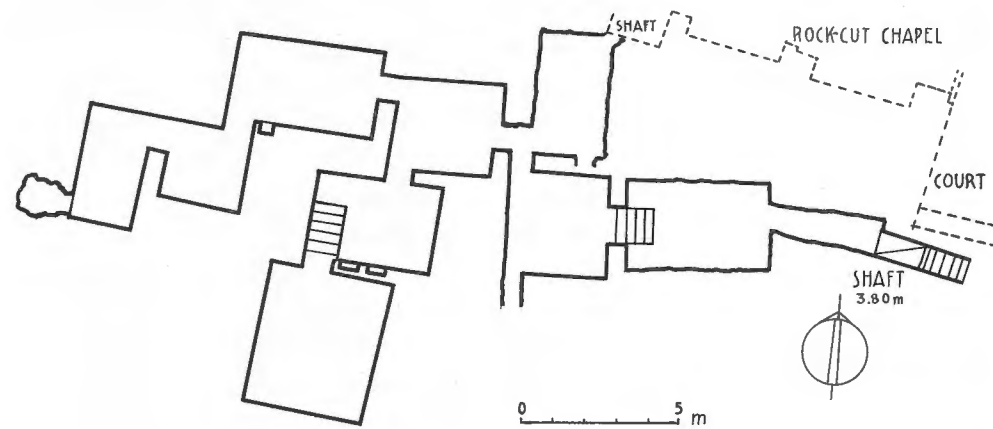
The underground apartments are on an irregular plan. A vertical shaft opening in the court or in a room (No. 359) descends for 3-4 meters to a corridor leading into a vaulted room, connected by a few steps with a second one cut at a lower level. In the tomb of Anhorkhawy a third room is connected by a stairway with the second. All the rooms are lined with brick walls and covered with vaults (1 brick thick). A mud mortar covered with plaster and painted forms the finishing of the walls. The tomb of Qaha had been burned, but that of Anhorkhawy shows a well-preserved magnificent painting. No fewer than eight panels decorating the vaults have different patterns, some showing Cretan influences. The scenes represent the deceased and his wife adoring various deities, and a group of deified pharaohs and queens sailing to Elephantine, at a game of chess, receiving various offerings or incense, or listening to the songs of a harper.

THE ROCK-CUT CHAPEL AND TOMB (No. 217).⁴⁵¹ A court surrounded by a rough wall precedes the façade of the chapel hewn in the rock. A stela was set on the south side of the entrance doorway. The chapel is not axial with the court and consists of three rooms laid out on an axis perpendicular to the façade (figs. 217, 218). The walls and vaults were lined with brick, plastered and white-washed. No trace of painting was found. In the rear wall of the third chamber, set transversely to the axis of the entrance, a small niche is cut at some height (0.86 m.) above the floor. It seems that a shaft opened in the southwest corner of the floor.

A pyramid rose above the portico in front of the façade.

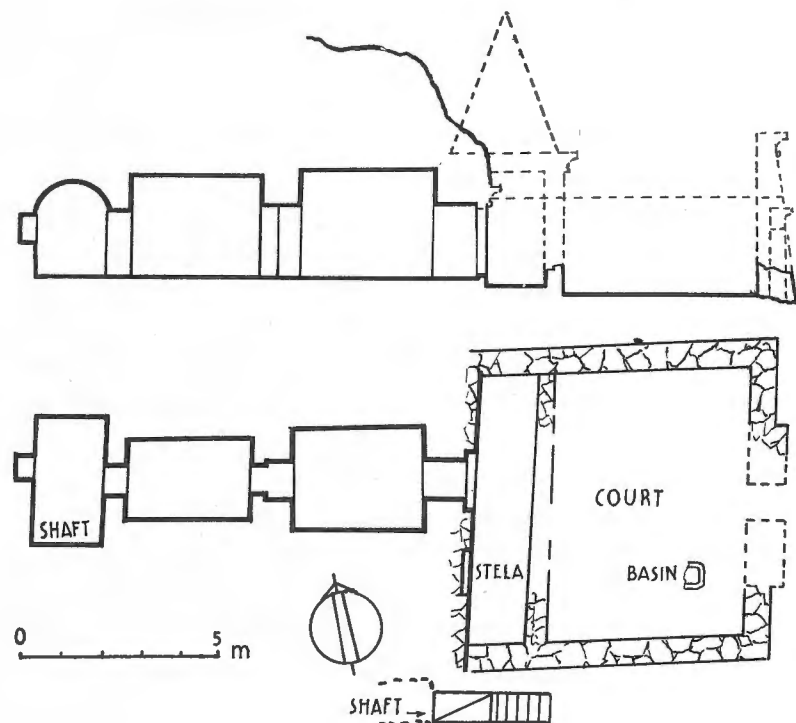
The substructure features nine chambers, probably the result of two or three burial apartments connected at some later date.

THE VOTIVE CHAPELS.⁴⁵² About twenty chapels, built as independent structures in brick or stone, opening east or south, were found in one group. They



217. Plan of the substructure of tomb No. 217 at Deir el Medina.

218. Plan and section of the rock-cut chapel No. 217.



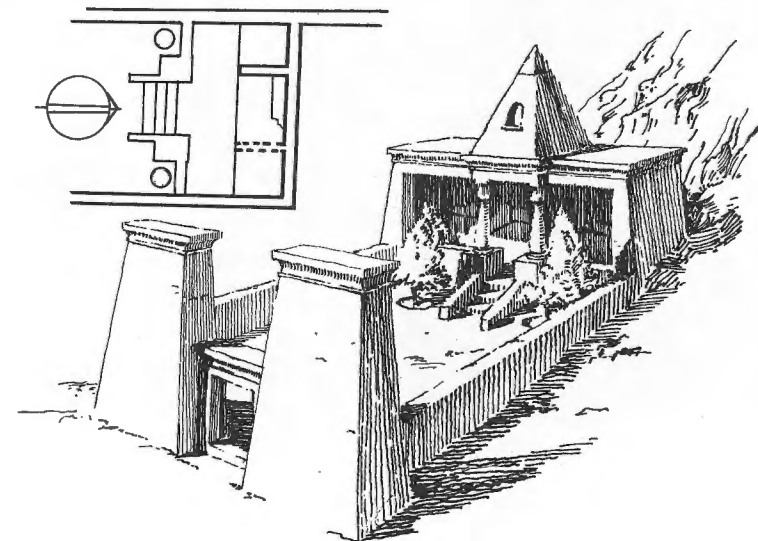
present a strange resemblance to the votive chapels at 'Amarna. It seems, however, that most of the chapels at Deir el Medina date from the Nineteenth and Twentieth dynasties and were dedicated to the cult of popular deities such as Taurt, the goddess of womanhood, Meryt Seger, the goddess of the Theban Mountain, and the deified Amenhotep I.

The chapel consists of one or two courts, sometimes with a portico at the back supported on columns or pillars, and a sanctuary composed of a pronaos and one or more naoi, to which ascends a stairway. The façade of these rooms is of the open type: columns or pillars with screen walls crowned with a cornice. Purification basins of various forms in stone or brick were set in the wall of the court in front of the sanctuary. A row of brick benches lined the second court. Priests' dwellings and magazines stood near the chapels.

They were constructed in stone or brick, whitewashed in the court and portico but decorated with paintings in the sanctuary. Columns were of wood or brick, upon stone bases. Vaults were in brick and flat ceilings in wood and mats. Stairways were either in stone or brick, while a layer of rammed earth, sometimes covered with stucco colored red, formed the floor.

VOTIVE CHAPEL (No. 1213).⁴⁵⁸ The brickwork structure abutting on the cliff is directed S.-N. and consists of a court with benches (east and west) and a raised sanctuary with open façade on two columns which contains three contiguous shrines (fig. 219). On both sides of the stairway ascending to the

219. Plan and restored perspective of the votive chapel No. 1213 at Deir el Medina.



sanctuary were two large jars, perhaps for ablution water or trees. The naoi were raised on a platform, and one might have been dedicated to Taurt, the hippopotamus goddess so important in the popular religion at that time. It is surmised that a pyramid surmounted the central part of the portico.

'AMARNA ⁴⁵⁴

A necropolis of courtiers' tombs cut in the encircling cliffs adjoined the ephemeral capital of 'Amarna. Apart from the Theban necropolis this is the only New Kingdom agglomeration of tombs (numbering 25) that can be called a necropolis. Some of the most important personages who had already begun to prepare their tombs at Thebes caused new ones to be cut at 'Amarna. Many of the tombs, however, were left unfinished when Tut'ankhamun returned to Thebes. Two of these (Nos. 12, 13) show the method followed by the rock-cutters.

The tombs are grouped in two stretches of the curved escarpment bordering the 'Amarna plain, at the beginning of two mountain tracks, to the north and to the southeast (22 tombs). A few tombs, one of them being the royal tomb, lie in a ravine to the east.

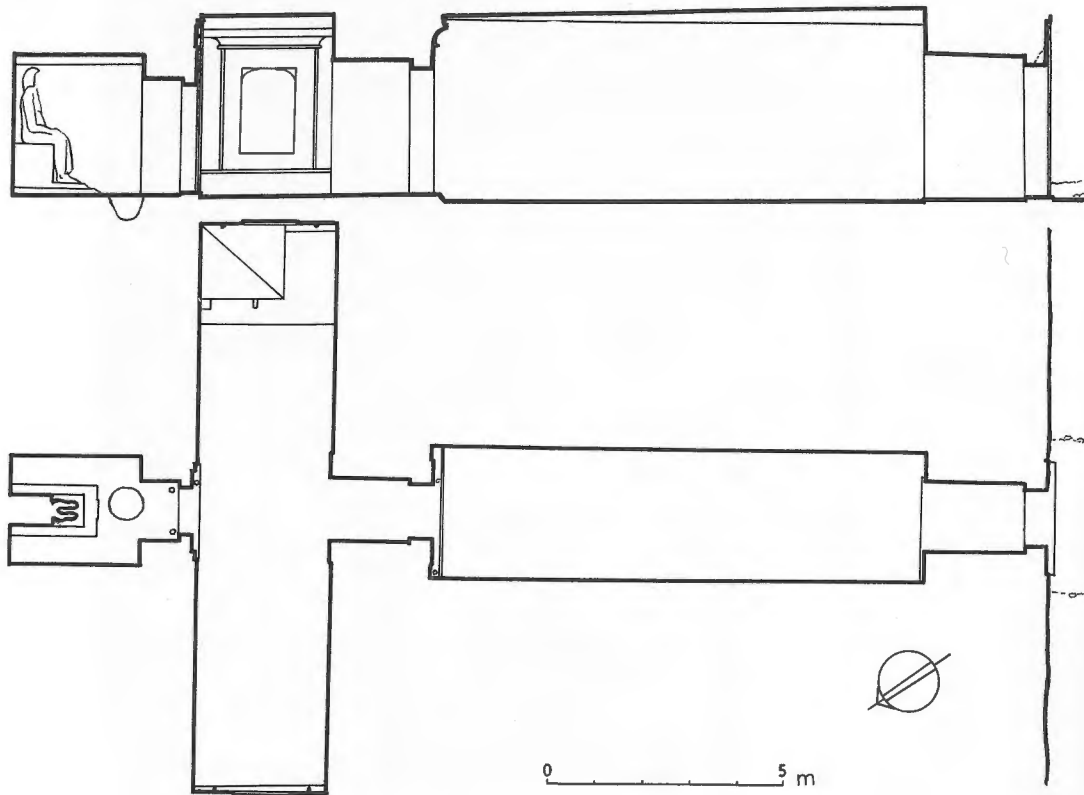
General Description

The type of tomb is very similar to that at Thebes during the Eighteenth Dynasty. A court, surrounded on three sides by a brick wall, fronts the rock-cut entrance façade of the tomb. The cruciform plan has a deep hall preceding the broad hall (Nos. 3, 5, 11), both more or less rectangular with rows of columns (pl. 63). The true Theban plan, where the broad hall precedes the deep hall, occurs twice (Nos. 8, 9). In nearly all the tombs a deep statue-niche is cut in the axis in the rear wall. It is sometimes replaced by a simple niche. On one side of the first or second hall a shaft or stairway opens in the floor and leads down to the burial chamber. Many of the tombs were left unfinished.

The decoration of the tombs consists of scenes in sunk relief. But whereas the Theban scenes show activities of the owners, those at 'Amarna are always



Plate 63. Rock tomb of Ay at 'Amarna.

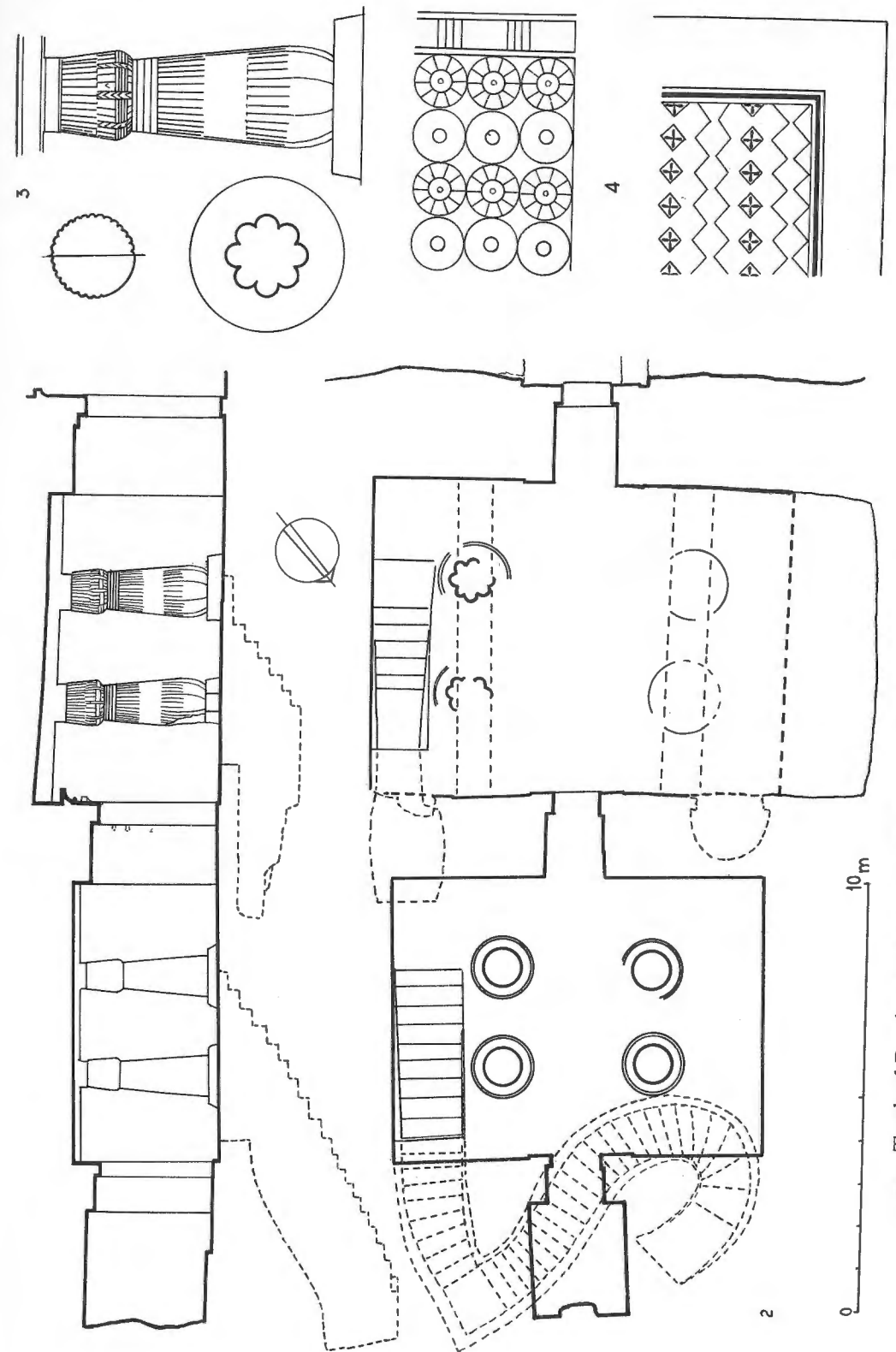


220. Plan and section of the rock-cut chapel of Ahmose at 'Amarna.

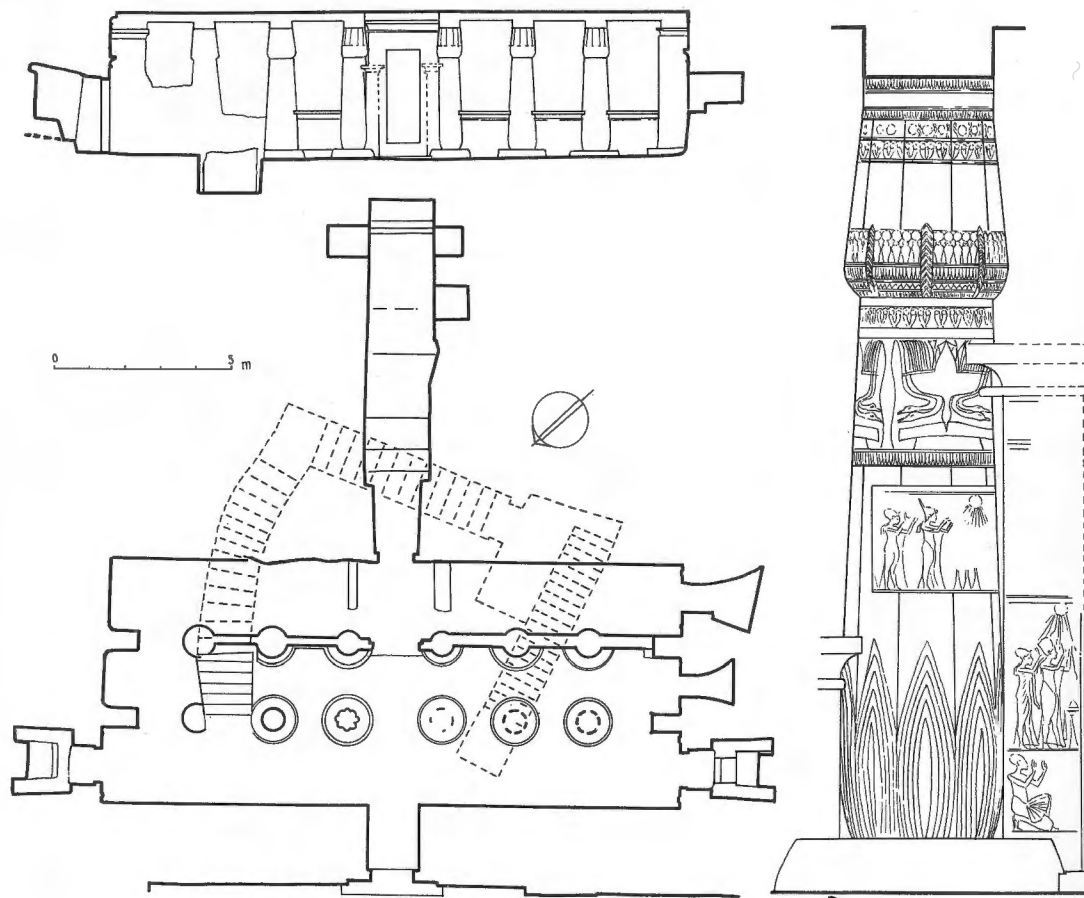
in conjunction with Pharaoh, the master of the owners and the prophet of the new religion. The scenes accordingly feature the Aten and Pharaoh⁴⁵⁵ as the central personages about whom everything revolves. •

Typical Examples of Tombs at 'Amarna

THE FAN-BEARER AHMOSE (No. 3).⁴⁵⁶ The symmetrical plan is quite simple, cruciform, laid out very accurately and consisting of a deep, corridor-like hall connected to a broad hall containing a statue-shrine. This is one of the earliest tombs of the group (Year 9). The roof of the deep hall is vaulted at the beginning but flattens out to a ceiling at the end. On the walls of this hall are



221. Tomb of Panehsy at 'Amarna: 1, section; 2, plan; 3, south column in front hall; 4, design of ceiling patterns.



222. Plan, section, and detail of column from the tomb of Tutu at 'Amarna.

scenes showing a royal visit to the temple, with an escort of armed mixed troops and the royal family at a banquet in the hall of the palace.

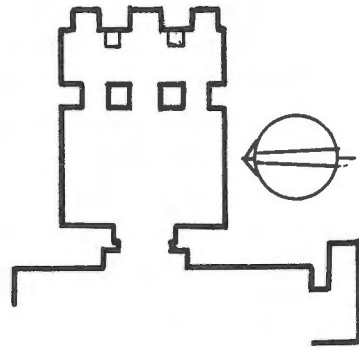
A short passage leads into the broad hall with a shaft opening at either end, surmounted by a door-shaped stela carved in the eastern and western walls (fig. 220). The shrine opens through a doorway with rows of uraei above the transom. The statue, cut in the rear wall, represents Ahmose seated. A libation basin had been cut in the floor in front of it. The roof is vaulted. A door with two leaves closed the shrine. It is noteworthy that the side wall of the shrine is a perfect square and that the harmonic analysis reveals a real mastery in the design.

PANEHSY, PRIEST AND SUPERINTENDENT OF THE GRANARY OF THE ATEN (*No. 6*).⁴⁵⁷ The two halls are rectangular, nearly of the same dimensions. This plan seems to have been used as a model for the unfinished tomb of Meryre'. The front hall, irregular in plan, has four bundle papyriform columns carrying architraves parallel to the main axis. The column is squat and the eight original bundles break above the sheathing leaves into thirty-two stems. A blank unsculptured area at mid-height of the shaft was filled with the names of Pharaoh and a representation of the unification of both South and North kingdoms. The decoration of the hall shows sculptured scenes, once brilliantly colored, representing among others Panehsy rewarded with gold necklaces by Pharaoh from the window of appearance in the palace, the royal family presenting offerings at an altar in the temple of the Aten, and the royal family driving out (fig. 221).

The inner hall, similar to the front hall, has four bundle papyriform columns. A stairway of forty-three steps descends from the floor, turns sharply, and continues as a spiral to the burial casket under the shrine. Curved stairways are also known from other tombs (*No. 9*) and in wells at 'Amarna.

The shrine opening in the center of the rear wall contained a seated statue and was inscribed. The tomb was transformed by the Copts into a church, with considerable alterations carried out in the front hall.

THE CHIEF SERVANT TUTU (*No. 8*).⁴⁵⁸ The plan of this tomb is of the usual Theban type, with a broad hall and a deep corridor-like chamber. The broad hall has two rows of six columns each, set transversely to the entrance axis, and antae pilasters at both ends. The papyriform columns were decorated with



223. Plan of the chapel of the tomb of Neferssekheru at Kom el Ahmar.

bands inspired from jewelry design, perhaps in imitation of the faïence inlay in the columns of the palace.

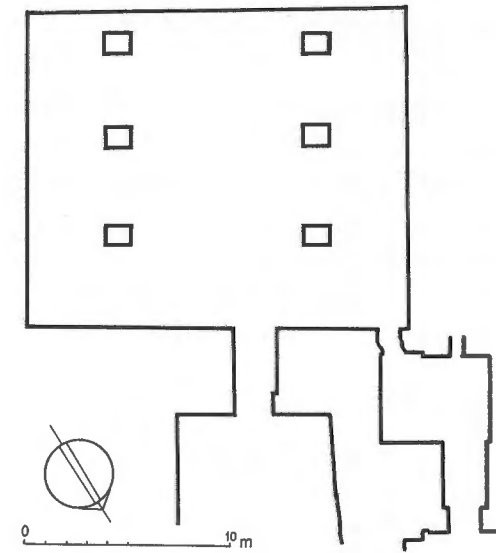
The third innermost N.-S. aisle, the floor of which is slightly raised, is screened off by a low corniced wall decorated with scenes of the worship of the Aten which runs between the columns, except for the central passage. A stairway starting at the northern columns descends in two flights to a small chamber, from which it turns again at a right angle to a rough excavation (fig. 222).

The decoration shows the stereotyped scene of the rewarding by Pharaoh and his wife, seated in the courtyard of the palace or standing at the window of appearance. The corridor was left unfinished.

PROVINCIAL CEMETERIES

*Kom el Ahmar (near Minya): Tomb of Neferssekheru*⁴⁵⁹

The Royal Scribe and Great Steward Neferssekheru (Nineteenth Dynasty) caused a tomb to be cut at Kom el Ahmar, in the vicinity of the rock-cut tombs of the Old Kingdom. Its plan resembles that of the latter type, with a square hall separated from an inner transverse room by two pillars to which correspond two pilasters (fig. 223). Three niches with statues open in the rear wall.



224. Plan of the chapel of Tutu at Deir Rifa.

In the side wall of the court is a chapel featuring a naos with an ape in a niche. The decoration of the walls shows the usual funeral scenes: mummy on its bier with mourning processions, view of tomb, bearers bringing offerings and funerary equipment, and funeral feast.

*Deir Rifa*⁴⁶⁰

Besides the rock tombs from the Middle Kingdom at Deir Rifa there are a few tombs of grandees from the New Kingdom.

TUTU. The King's Son Tutu, Commander of the Troops, had a tomb cut on the same plan as those of the Middle Kingdom. It is similar to the tomb of Khnemu'a. Two features are new, however: the entrance passage is longer than it was in the neighboring tombs from the Middle Kingdom and resembles that of the Theban tombs; and there is no niche in the rear wall. This may be explained by the fact that the niche developed into the shrine, which is quite small, while the outer hall assumed the shape of the wide and long passage (fig. 224).

*Nag' el Mashayekh (north of Abydos)*⁴⁶¹

The Overseer of the prophets, Inherthosi (reign of Merneptah), left a rock tomb of the type encountered at Deir Rifa or Thebes (No. 178). The outer hall, set transversely, has four pillars supporting two architraves running parallel to the longitudinal axis (as in the Middle Kingdom tombs at Beni Hassan or the New Kingdom tombs at Thebes), and a niche in the center of each of the side walls. The chapel, in which the shaft to the underground apartment opens, has two niches in the rear wall.

*El 'Amra (Abydos)*⁴⁶²

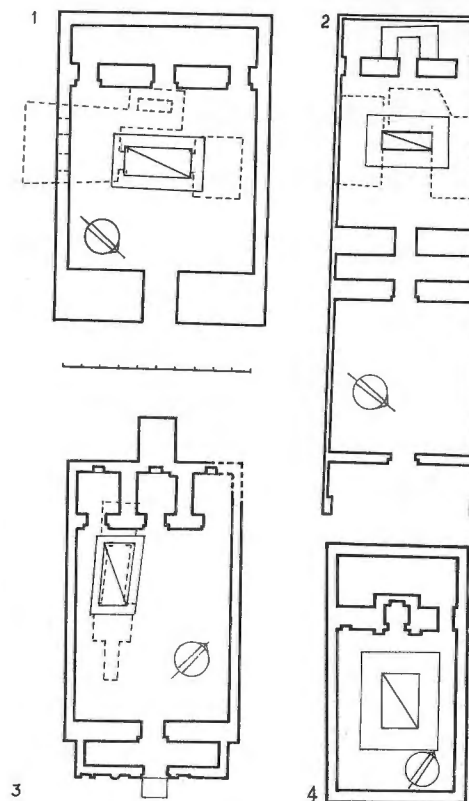
This is one of the few New Kingdom cemeteries having tombs of the mastaba type. The brick superstructure (Eighteenth Dynasty) has an elaborate plan, sometimes resembling that of small temples. Some mastabas, however, are quite simple, with a court and a room at its rear, connected by three doorways (D. 9).

In the Nineteenth and Twentieth dynasties the simple type is still used unchanged, or with the back chamber divided into three contiguous shrines. A massive block of brickwork, sometimes embodying a small cachette (D. 28), is added on the outside at the back of the central shrine.

The shaft, bricked to within 4-5 feet of its depth, opens its rectangular mouth in the middle of the court and leads down to the burial apartment. This consists of four or five rooms on an irregular plan. In some tombs a stone slab was let down from above and blocked the doorway to the funerary apartment, being kept in position by two grooved stone blocks (D. 50, 11).

TYPICAL EXAMPLES: EIGHTEENTH DYNASTY SIMPLE TYPE: D. 9. A rectangular brick enclosure with a court entered from a central doorway has at its back a long transverse room, probably vaulted, in which three arched doorways open. The rectangular shaft opens transversely in the middle of the court and leads down to a chamber on either side (fig. 225:1). The largest contains two pillars cut from the rock, and its pavement is higher at its rear. It is connected with a small recess for a sarcophagus let into the floor.

LARGER TYPE: D. 8. This assumes the pretentious rectangular plan of a temple,



225. Plans of chapels D. 9 (1), D. 8 (2), D. 24 (3) at El 'Amra.

with four courts separated by thick transverse walls. In the middle of the last court the pit opens transversely (fig. 225:2). At the rear of this court three arched doorways lead onto a transverse chamber. Behind the central doorway the pavement level is higher by one brick, probably as a coping around the place of offering.

The shaft opening is bordered with a wall rising above the desert level and surrounded by another lower wall. The funerary apartment consists of two rooms at either end of the shaft and connected by a passage adjacent to the shaft wall.

NINETEENTH-TWENTIETH DYNASTIES: D. 24. The plan is rectangular and consists of three courts having three contiguous vaulted shrines at the rear (fig. 225:3). In the back wall of each shrine a niche containing a stela opens. In front of the court stretches a transverse forecourt with a brick pavement (7 in. [0.18m.] high) before the entrance door. The shaft opens in a corner of the court and leads down into a small chamber at either end.

*El 'Arāba (Abydos)*⁴⁶³

These tombs are also of the mastaba type, with a shaft leading down to a substructure, either cut or built in the subsoil under the chapel. Rooms are roofed over with vaults (E. 10). The superstructure has evolved from the simple Middle Kingdom type into three rooms roofed over with vaults.

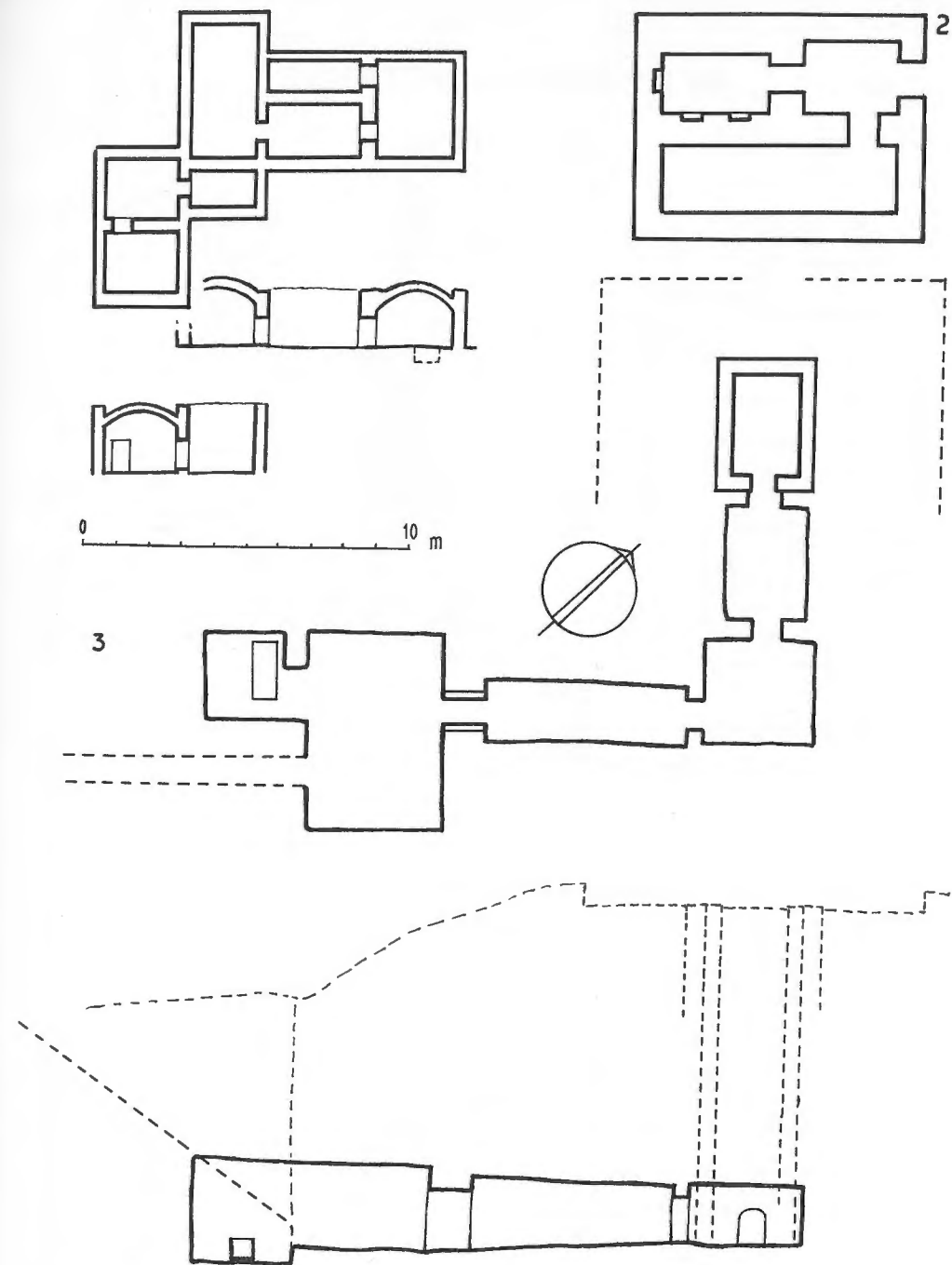
The substructure can be extremely elaborate, with vaulted rooms built in brick in three stories (Anhorauf'ankh, Twenty-Second Dynasty).

TYPICAL EXAMPLES: E. 10 (EIGHTEENTH DYNASTY). This consists of two contiguous structures, one with two vaulted rooms and the second with three, surrounding a shaft.

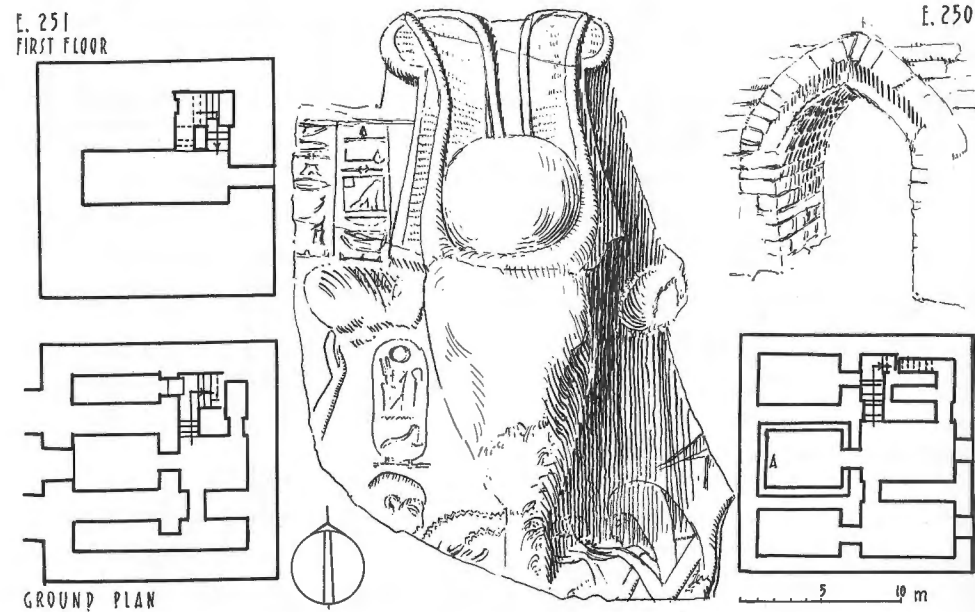
KHNUMY AND MINMOSE (NINETEENTH DYNASTY). The substructure, reached through a vertical shaft lined with brick, consists of a first chamber connected to a second one, from which a passage leads at right angles to the first direction into an antechamber (fig. 226). In its rear wall are the openings to the burial chamber containing a sarcophagus and to the sloping constructional passage ascending to ground level. This last feature, already known in archaic mastabas, recurs here after having been used only sporadically in the Middle Kingdom (Qatta, Lisht; cf. Vol. II, pp. 170-177).

Esna

In the cemetery 4 kilometers northwest of Esna there are tombs of an unusual type dating from the Twentieth Dynasty.⁴⁶⁴ They are similar to one another in the shape of a two-storied superstructure in mud brick 14.80 meters square, 7.80 meters high, oriented to the cardinal points, accessible from a doorway in the east side of the first floor. A staircase starting in the vicinity of the doorway descends in the northeast corner in three counterclockwise flights passing a northwest chamber to a room on the lower floor sunk about 2 meters below ground level. The main burial chamber opens axially to the rear, is lined with stone and roofed with a stone ceiling above which rises a brick vault similar to those in the other chambers. Two recesses in the floor provided for stone sarcophagi. Traces of sacrifices of oxen, goats, and rams before a stone slab carved in high relief with the head of the cow of Hathor and gilded pointed to a funerary cult to Hathor as described in the inscription "An



226. Tombs at El 'Araba: 1, plan and section of a tomb from the Eighteenth Dynasty; 2, plan of a tomb from the Eighteenth Dynasty; 3, plan and section of the substructure of Minmose (Nineteenth Dynasty).



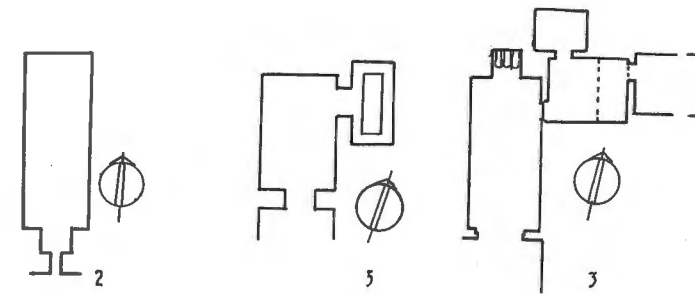
227. Plans of two tomb shrines (E. 250, E. 251) from the Twentieth Dynasty at Esna, and detail of the slab representing the cow of Hathor, and a pointed arch.

offering to Hathor, Lady of Ta Djoser, and to Meryt Seger, Mistress of the West." The scene in sunken low relief dated by the cartouche to Ramses IV represents the deceased and his wife drinking from two streams on either side of the muzzle of the cow (fig. 227). As to construction this type of tomb shrine at Esna exemplifies the early use of the pointed arch and vault, truly an Egyptian invention.

This unique type of superstructure combining tomb and chapel is important because it imitates the typical multistoried house of the Empire (cf. house of Thutnefer, see fig. 1), as maintained in the Late and Greco-Roman periods (cf. houses at Medinet Habu)⁴⁶⁵ when it serves also as mortuary chapels and tombs at Hermupolis West.⁴⁶⁶

*El Kab*⁴⁶⁷

The small rock tombs date from the Middle Kingdom or the beginning of the



228. Rock tombs of Ahmose Pennekhebet (2), Ahmose son of Ibana (5), and Paheri (3) at El Kab.

New Kingdom. The latter are on a small plan, already met with in the tomb of Sebeknakht (Eleventh Dynasty), and consist of a deep hall (N.-S.) with an adjacent small room in the floor of which a shaft opens. This room is set at a right angle to the main hall and opens from a door at the end of the east wall. The decoration in fine colored low relief shows scenes from the lives of the deceased.

TYPICAL EXAMPLES: AHMOSE PENNEKHEBET (FROM THE REIGN OF AHMOSE TO THAT OF HATSHEPSUT). This is a single vaulted deep hall (S.-N.), whose walls were covered with fine reliefs (fig. 228:2).

AHMOSE SON OF IBANA (REIGN OF AHMOSE TO THUTMOSE I). This tomb was prepared for Admiral Ahmose, who was instrumental in the liberation of Egypt from the Hyksos, by his grandson the Painter Paheri. The façade on the court has a central doorway opening into a large hall connected by a door at the end of the east wall to a small room, in the floor of which the shaft opens (fig. 228:5).

PAHERI (EIGHTEENTH DYNASTY). This tomb of the Nomarch Paheri from the reign of Thutmose III is the largest of this group; its plan is developed from that of his grandfather Ahmose (fig. 228:3). In the rear wall of the vaulted hall the statues of the deceased, his wife, and his mother are set in a deep recess. The door in the east wall leads to an antechamber having a shaft and two side rooms. Scenes with well-preserved colors represent daily life.

Hierakonpolis (Arabic: Kom el Ahmar)

A few of the rock tombs date from the New Kingdom and are either of the simple type, with a deep hall (E.-W.), a deep recess in the rear, and a side chamber (Djehut), or of the Theban type (Harmose).

HARMOSE (REIGN OF THUTMOSE III). Harmose, High Priest of Nekhen, built a tomb on a symmetrical plan, with a transverse broad hall, a deep hall (E.-W.), and a deep recess in the back wall containing his statue and that of his wife.

*'Aniba (Egyptian: Mi'm)*⁴⁶⁸

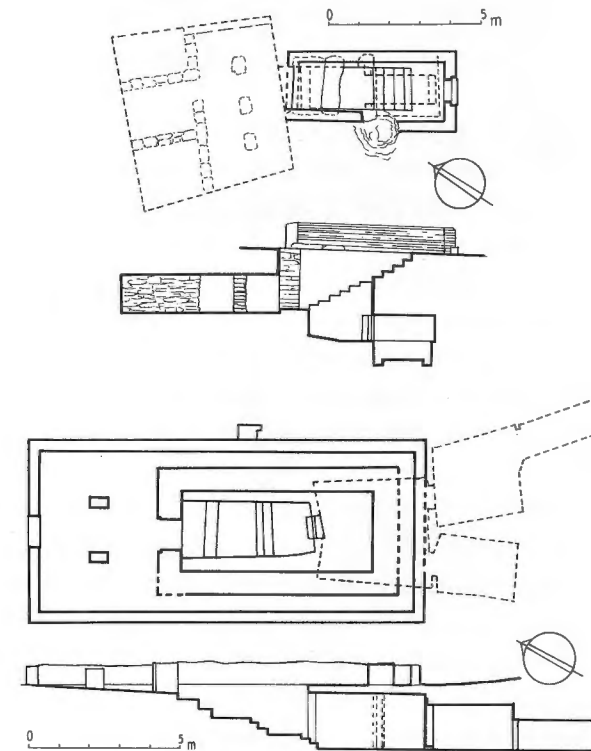
Two forms of superstructures can be differentiated in the New Kingdom necropolis at 'Aniba (Nubia): chapels in the shape of vaulted houses (Twelfth–Eighteenth Dynasty) and pyramids (Nineteenth–Twentieth Dynasty), the latter being probably influenced by Thebes.

A vertical shaft or stairway descends from this superstructure to the burial apartment.

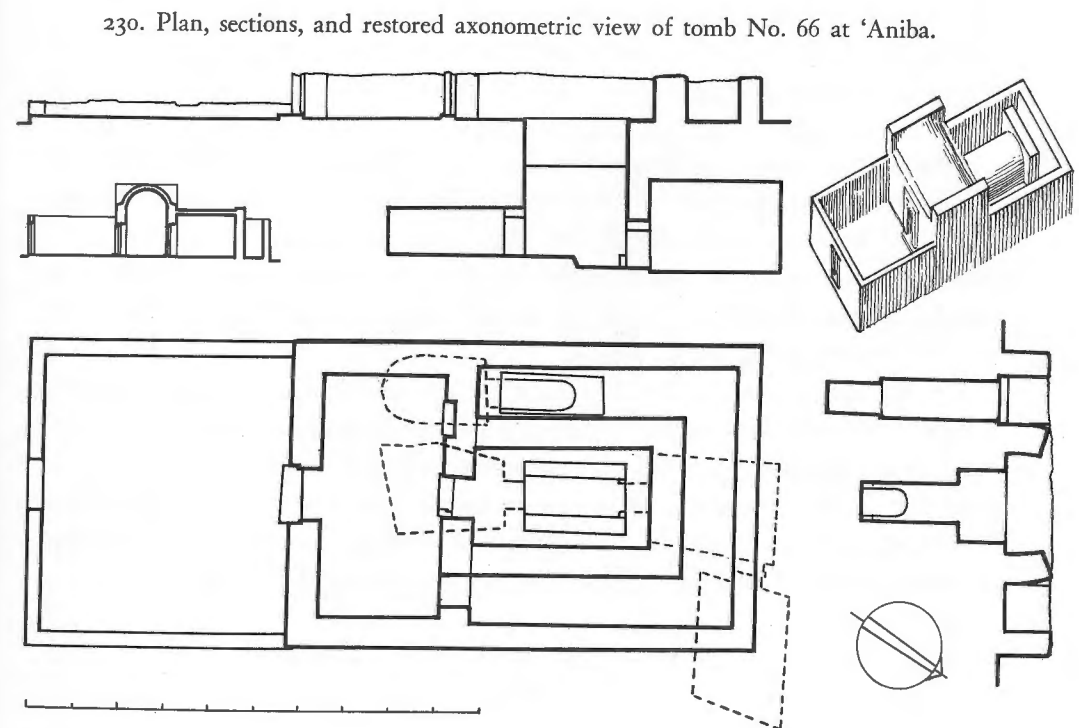
CHAPEL TYPE I. The superstructure in the form of a house has a rectangular room (2.0–2.9 x 2.5–10.0 m.), roofed over with a barrel or catenary vault, abutting on a rectangular wall at both ends. A door opens in the east wall, often preceded by a portico. The mouth of the shaft opens in the brick floor. In front of the structure is a rectangular court, wider than the room and surrounded by a wall. The court may surround the structure and form a narrow passage (S. 5, 13; fig. 229). Two or four pillars in two rows on both sides of a central pathway in the court probably supported a pergola, imitating rows of columns along the processional ways in the large temples of the New Kingdom (Luxor, Mut at Karnak).

One superstructure (S. 66) even has a broad hall set in between the court and the chapel, which reminds one of the typical plan of the house imitated in the Theban rock-cut tomb chapels (52, 53, 56, 100) (fig. 230).

A similar superstructure of the simplest type occurs also in the Eighteenth Dynasty tombs at Buhen.⁴⁶⁹



229. Plans and sections of tombs Nos. 3 and 5 at 'Aniba.



230. Plan, sections, and restored axonometric view of tomb No. 66 at 'Aniba.

CHAPEL TYPE II. A brick pyramid (S. A 35: 7.7 x 7.9 m., 8.4 m. high) with an angle of incline of 60°, crowned with a sandstone pyramidion, stands on a brick or stone square platform (0.5 m. high). A vaulted room is built inside, accessible through a door in the east face (S. A 35: 2.6 x 3.7 m.). In the west wall one to three niches contain stelae or offering-tables. Walls are decorated with paintings of religious scenes (as at Deir el Medina and Dra' abul Naga) and the vault, with a vine or mat pattern.

The mouth of the shaft (1.9-3.3 m. deep) opens in the court preceding the pyramid, and is blocked with stone slabs laid on a groove and is plastered over to conceal it.

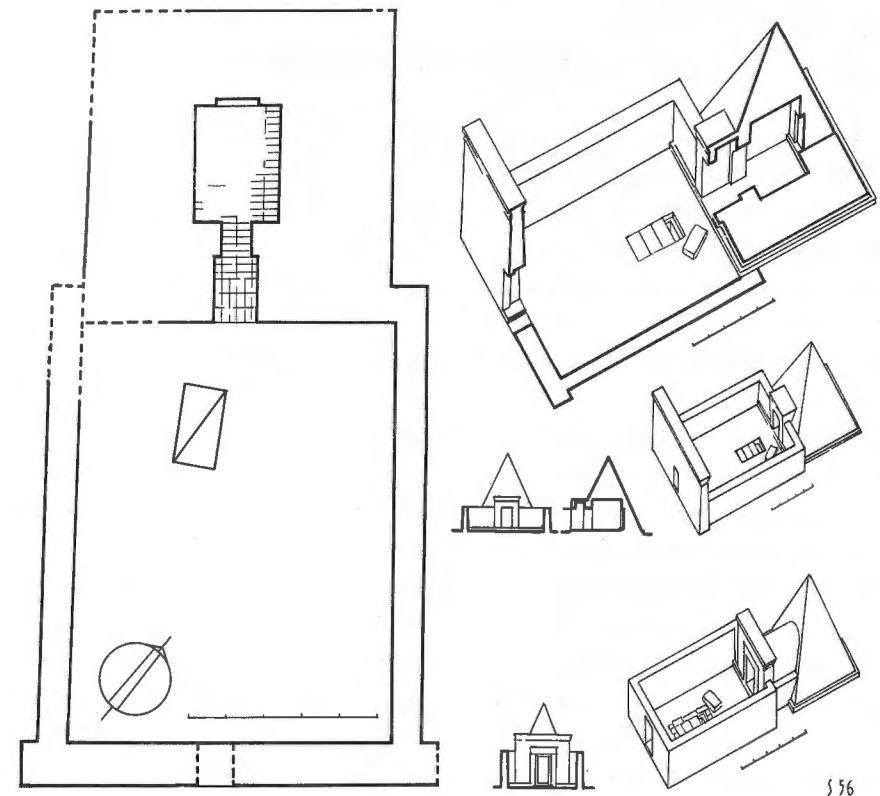
The burial chambers are accessible through a doorway from the bottom of the shaft and are hewn with horizontal ceilings and floors, undecorated walls, sometimes with one or two pillars, with abacus left to support the roof (fig. 231). The doorway to the burial apartment can be blocked up by a portcullis sliding down in grooves (S. 75), or simply with a stone slab.

Devices to guard against tomb robberies consisted of false bottoms in shafts (S. 91), the blocking of the subsidiary burial chambers (S. 66), and a burial chamber set under the stairway (S. 3).

ROCK TOMB OF PENNUT (RAMSES VI).⁴⁷⁰ This consists of a transverse hall (6.5 x 2.8 m.) with colored low reliefs (earthly scenes on the east; underworld on the west). A shaft opens in the middle of the floor just in front of a deep recess in the rear wall, in which three statues are cut.

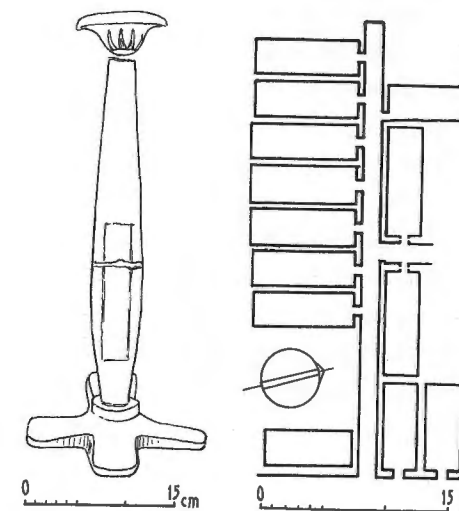
CATACOMBS OF ANIMALS (EIGHTEENTH DYNASTY, DENDERA).⁴⁷¹ To the southwest of the cemetery from the Old Kingdom at Dendera, catacombs are dug for the burial of animals of sacred species (fig. 232). Mummies of gazelles, cats, ichneumons, birds, and snakes were found there. Petrie suggested a date of the Eighteenth Dynasty, in view of the cult objects found dumped from the temple into the catacombs.

The catacombs are in the shape of an underground vaulted gallery (E.-W.) of brick built at the bottom of an excavation and covered with gravel and sand. Along the south wall are seven adjacent chambers separated by partition walls. The entrance doorway opens east. Later, a second gallery stretched northward and was flanked with rooms on both sides (Twenty-Second-Twenty-Third dynasties). The floor was unpaved.



231. Plan, restored elevation, and two axonometric views of chapels S. A 35, and axonometric view of S. 56 at 'Aniba.

232. Plan of the catacombs for animals at Dendera (Eighteenth Dynasty), and sketch of a blue-glazed pottery stand in the shape of a papyriform column from a shrine.



Among the interesting objects found here are some blue glazed pottery stands in the shape of papyrus stems of triangular section on a cruciform base,⁴⁷² a type of ceremonial stand later worked in bronze by the Etruscans and the Romans.⁴⁷³

THE ACHIEVEMENT OF FUNERARY ARCHITECTURE

The characteristic feature of funerary architecture in the New Kingdom is the preponderance of rock-cut tombs. Already in the Middle Kingdom there had been a marked development in the use of rock-cut tombs, probably a result of the new trend initiated by the nomarchs who preferred to be buried in the cliffs above their city. It seems that the type appealed to pharaohs as well as to private citizens, not for the same reason of individual freedom as during the Middle Kingdom, but rather for security against tomb robbers. The violation of the tombs, which had occurred ever since the First Intermediate Period, had become a permanent danger on account of the regular activity of robbers helped by corrupt officials. It has been surmised that this sad state of affairs, pointing to social degeneration, was well established after the religious reform of Akhenaten, or even before.

The unfavorable picture of tomb robberies drawn by the official records is counterbalanced to a certain extent by the records of pharaohs (Ramses III) stating that they left the earlier tombs undisturbed when they had to build in their vicinity. Such a pious respect for earlier buildings is also expressed by the royal inscriptions and the layout of those temples where a new building had to embody or abut on an earlier sanctuary.

Accordingly, architects devised for pharaohs and nobles long narrow corridors that extended deeply into the cliffs of the hills on the west of Thebes. A valley portal and a valley temple were built in front of, but not directly connected to, these tombs—both elements being remnants from the layout of the mortuary temples in the Old Kingdom. The tombs had no other means of access than one doorway, blocked with masonry and carefully concealed. This new type of tomb shows certain elements already used in the Middle Kingdom, such as false burial chambers and false corridors and shafts. The approach to the treatment of the program was quite new, being based primarily on hiding the only entrance doorway to a rock-cut apartment and disregarding

almost entirely earlier ingenious devices, such as portcullises and the doubling-back layout, which had formed such marked characteristics of the pyramids and tombs in the Middle Kingdom. The tombs of the nobles are on a symmetrical plan, featuring the two essential elements of domestic architecture: the broad hall and the deep hall. The tombs of the pharaohs, however, are not laid out symmetrically, but their long corridors turn right and later left beyond the false shaft, in an attempt, probably futile, to delude the robbers by concealing the doorway to the apartment opening on the farther side of the false shaft, under a layer of painted plaster. The futility of this shrewd plan must have soon been proved, as all royal tombs became strictly symmetrical in the shape of a long straight corridor where the sun's rays could penetrate, at least in the outermost section. This important change dates from Akhenaten's tomb at 'Amarna.

The decoration of a royal tomb was strictly of religious character with texts and innumerable representations of deities and genii. The tombs of the nobles followed more or less the same pattern as those of the Old Kingdom, with scenes usually in painting only.

Besides this new type another one, already found in the Middle Kingdom, was still in use. Here the funerary chapel formed part of the superstructure from which a well was sunk to a burial chamber, a program already appearing in the Old Kingdom. The pyramid, which had been discarded by the pharaohs, was added above the columned porch or portico already fronting Middle Kingdom private tombs. That architects did not innovate this second type of tomb is probably an effect of social conditions influenced by tradition. Such is the aspect of the typical tomb at Deir el Medina, the settlement of "The Servants in the Place of Truth." These artisans of the royal necropolis could have hewn their tombs in the cliffs surrounding their valley, but they seem to have preferred the old type of tomb consecrated by tradition, adding to its superstructure the pyramid, once a royal prerogative, and occasionally engaging part of the tomb in the rock. The typical tomb layout must have embodied a funerary garden on a waterway. Archaic traditional survivals are still encountered, such as constructional sloping corridors (Mastaba of Khnumy and Minmose at 'Arāba, Nineteenth Dynasty), besides the usual features (battered walls, cornice, torus). A minor element that seems to have been attested until now only in New Kingdom tomb superstructures is one or more rows of cones set at the top of the façade of the chapel, probably

representing the stylized ends of the reeds that roofed archaic huts. Such an element is met with in Babylonian terraces.

Symbolism, which played so prominent a role in religious architecture, also marked funerary architecture. It is difficult to account for the disappearance of the pyramid from the mortuary complex, although the royal tomb still displays Osirian as well as sun symbols. It has been surmised, quite plausibly, that the pyramid did not really disappear from royal tombs but was symbolically replaced by the pyramid-shaped apex of El Qurn (Egyptian "The Front"), which surmounts the mountainous range containing the royal tombs. In the tomb itself two elements might show some influence of symbolism. The sarcophagus chambers of Thutmose I and III are on an oval-shaped plan, perhaps symbolizing the oval shape of the world as pictured by Egyptian texts. The outer part of the corridor of a royal tomb is open to the sun's rays, probably representing the course of the sun, an explanation corroborated by its name "Corridor of the Way of (the sun god) Shu." The lavish use of gold is certainly connected with its symbolical implication regarding the life of the deceased in the Netherworld.

In construction a few innovations can be detected. The paintings in private tombs often show a picture of a house owned by the deceased, and from those representations much information about the technical achievement of the architectural draftsman can be derived. Many of the conventions still used today were already known: hatching, scale, double lines for walls in section, axis of symmetry (drawing of the tomb of Ramses IX). Although the notion of scale in the documents available does not seem to be rigorous, it is no mere coincidence that in the few cases where the tombs represented do exist, the dimensions marked out on the Egyptian plans correspond to a large extent (tombs of Amenhotep I, Ramses IV and IX). This enhances the reliability of Egyptian architectural drawings. (Of course, the actual technical plans, probably on papyrus, have long disappeared.)

Regarding elements and methods of construction, the use of domes to cover tomb chapels, already ascertained in the Old Kingdom, seems to be general. A spiral staircase descends to the lower burial chambers in 'Amarna tombs and wells. Walls hewn in the rock, often of poor quality, are plastered over with clay and lime, a process apparently invented by Ineny, who used it for the first time in the tomb of Thutmose I.



Plate 64. Capital of a bud column from a rock tomb at 'Amarna; the column to the rear was left unfinished.

One would think that funerary architecture in the New Kingdom could not achieve monumentality since the tombs were concealed. Yet their interior does so, to a certain extent, and the style is impressive by virtue of the scale, though usually quite simple as regards elements and decoration. Private tombs imitate royal ones, and we find in the superstructures of those of Senmut, Semen, and Amenhotep a terraced layout recalling that of Hatshepsut's mortuary temple. Supports for the rock ceiling are in the shape of pillars, although columns occur (pl. 64), occasionally with screen walls running between them (tomb of Tutu at 'Amarna)—a treatment also used in peripteral temples and domestic architecture.

Shifts in the plan of the corridor are sometimes dealt with most ingeniously: in the tomb of Ramses III a vaulted niche, semicircular in plan, forms the butt end of the first section of the corridor, a planning device characteristic of Renaissance architecture about three millennia later. Superstructures of private tombs featuring a pyramid are well balanced, and the mass of the rather pointed pyramid is adequately set upon a step or a rectangular façade, sometimes fronted by a columned portico.

In the decoration an extensive use is made of painting for mural scenes as a substitute for low relief. Color is no longer used in flat spread only but in different shades and brushstrokes in an attempt to render modeling and shades as well as the transparency of textiles. Cretan influences in the decoration are obvious (Tomb of Qaha at Deir el Medina)—a manifestation quite understandable in view of the wide range of the Empire relations—a trend paralleled by the Mesopotamian and Cretan influences found in the palaces at 'Amarna and the Cretan influences in the Theban palaces (pl. 65).

In retrospect, funerary architecture in the New Kingdom does not show much ingenuity, and the new type of rock-cut tomb did not ultimately fulfill the aim for which it had been devised. The mummies of the pharaohs had to be gathered and transferred, first to the tomb of Seti I, later to that of Queen Inhapy at Deir el Bahari, and finally to a third cachette under the High Priest Psusennes (Twenty-First Dynasty). Perhaps better than other types, funerary architecture shows that architecture, following Egyptian culture in general, had already reached its apex in the Empire period and was on the verge of decline.

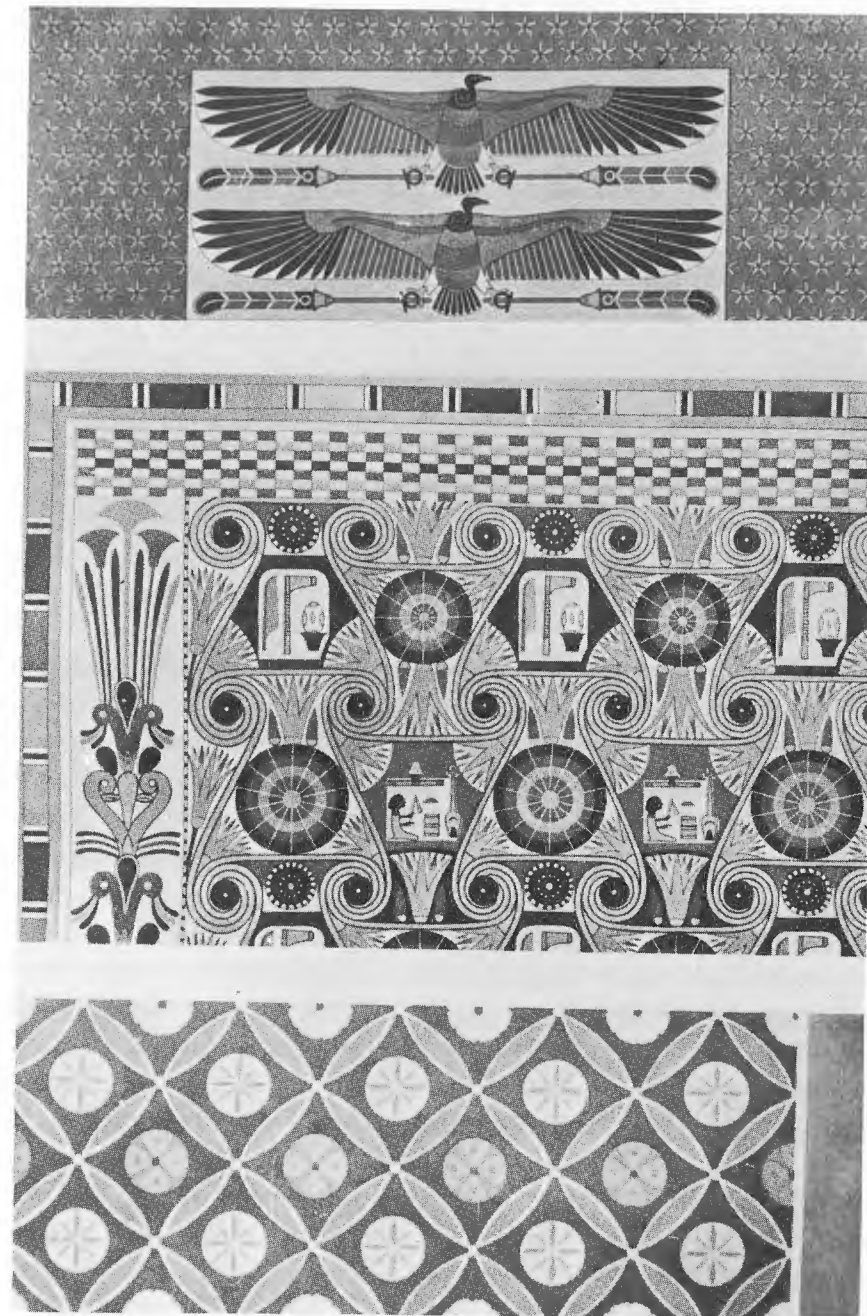


Plate 65. Painted decoration: (*upper*), ceiling of a temple; (*middle*), tomb of Neferhotep (Nineteenth Dynasty); (*lower*), tomb at Thebes (Twenty-First Dynasty).

V

Military Architecture

With the New Kingdom begins an era of Egyptian expansion in Asia. Some record of the momentous expeditions is to be found in the contemporaneous literature and in the extensive low-relief representations of Syrian fortresses on the walls of Egyptian temples and private tombs.

EVIDENCE FROM TEXTS

In spite of the abundant military scenes on temple walls, not much can be derived from texts about military architecture. Almost all the fortresses represented were located in Syria, being either Syrian structures or Egyptian ones built by Pharaoh to control his Asiatic possessions. They are rarely accompanied by more than a mere mention of their name.

Various terms could be used to designate a fortified structure, corresponding to various types: the stronghold (*bekhen*, "tower"), the fortress (*nekhetw*, from *nekhet*, "strong"), the frontier post (*khetem*, "seal") and the simple tower, probably the same structure as the one represented ever since the Old Kingdom by models and drawings. It is noteworthy that the etymological value of these names corresponds precisely to the special character of each one.

The proper names of fortresses are interesting, if not very informative. They may imply some connection to the location: the fortresses of Beki (near Kubban) and Taroy (near Ibrim) in Nubia,⁴⁷⁴ the fortified "Town of Pekanan" ("The-Canaan")⁴⁷⁵ under Seti, or the "Fortress of the West"⁴⁷⁶ under Merneptah and Ramses III. They can also be related to the name of the pharaoh who built them: the "Tower of Menmare"⁴⁷⁷ under Seti I, or the "Stronghold of Merneptah-Hotepirma."⁴⁷⁸

Often, however, the custom known since the Old Kingdom of giving strongholds compound names emphasizing some aspect of the courage and military valor of the pharaoh is still followed: the fortress built by Thutmose I at Tombos (Nubia) was "None-Faces-Him-Among-the-Nine-Bows-Together,"⁴⁷⁹ and the fortress built by Thutmose III in the Lebanon, "Menkheperre-Is-the-Binder-of-the-Barbarians."⁴⁸⁰ There is no doubt that these qualities implied some event connected with the history of the expedition during which the structure was built.

It seems to have been customary to have the war-captives settled in fortresses bordering the country, as well as near or inside the mortuary temples at Thebes. It is said of Ramses II, on the occasion of his victories over the Libyans, that "he has settled the Tehenu [Libyans] on the heights, filling the strongholds, which he built, with the captivity of his mighty sword."⁴⁸¹

A brief record of the construction of a fortification around the city of Megiddo (Palestine), preceding its siege by the army of Thutmose III, is found in the famous military annals of that pharaoh in the temple at Karnak: "They measured this city, [surrounding it] with an inclosure, walled about with green timber of all their fruit-trees. His majesty himself was upon the fortification east of this city, [inspect]ing . . . It was [walled] about with a thick wall . . . with its thick wall. Its name was made: 'Menkheperre (Thutmose III)-is-the-Surrounder-of-the-Asiatics'."⁴⁸² An interesting corroboration of the desperate attempt of the enemy to find refuge inside their fortress, as illustrated with much realism in the scenes on the walls of Egyptian temples, is to be found in this text about the same siege of Megiddo: "They fled headlong to Megiddo in fear, abandoning their horses and their chariots of gold and silver. The people hauled them (up), pulling (them) by their clothing, into this city; the people of this city having closed (it) against them [and lowered] clothing to pull them up into this city."⁴⁸³

As more extensive countries were to be controlled by Egyptian garrisons during the Empire, more strongholds had to be built, even in the far-off districts of Asia. Ramses III records on the walls of his mortuary temple at Medinet Habu: "I built strongholds [*bekhenw*] in thy name in Egypt and [all] lands, likewise the land of Asia."⁴⁸⁴

The fortified residence of a Syrian prince is visited and described by Unamun in his report about his voyage to Byblos, in the reign of Ramses XI:

"When morning came he sent and had me brought up, while the god was reposing in the tent where he was on the shore of the sea. I found him sitting in his upper chamber, with his back against a window, while the waves of the great Sea of Syria beat behind his head." ⁴⁸⁵

REPRESENTATIONAL EVIDENCE ⁴⁸⁶ (fig. 233)

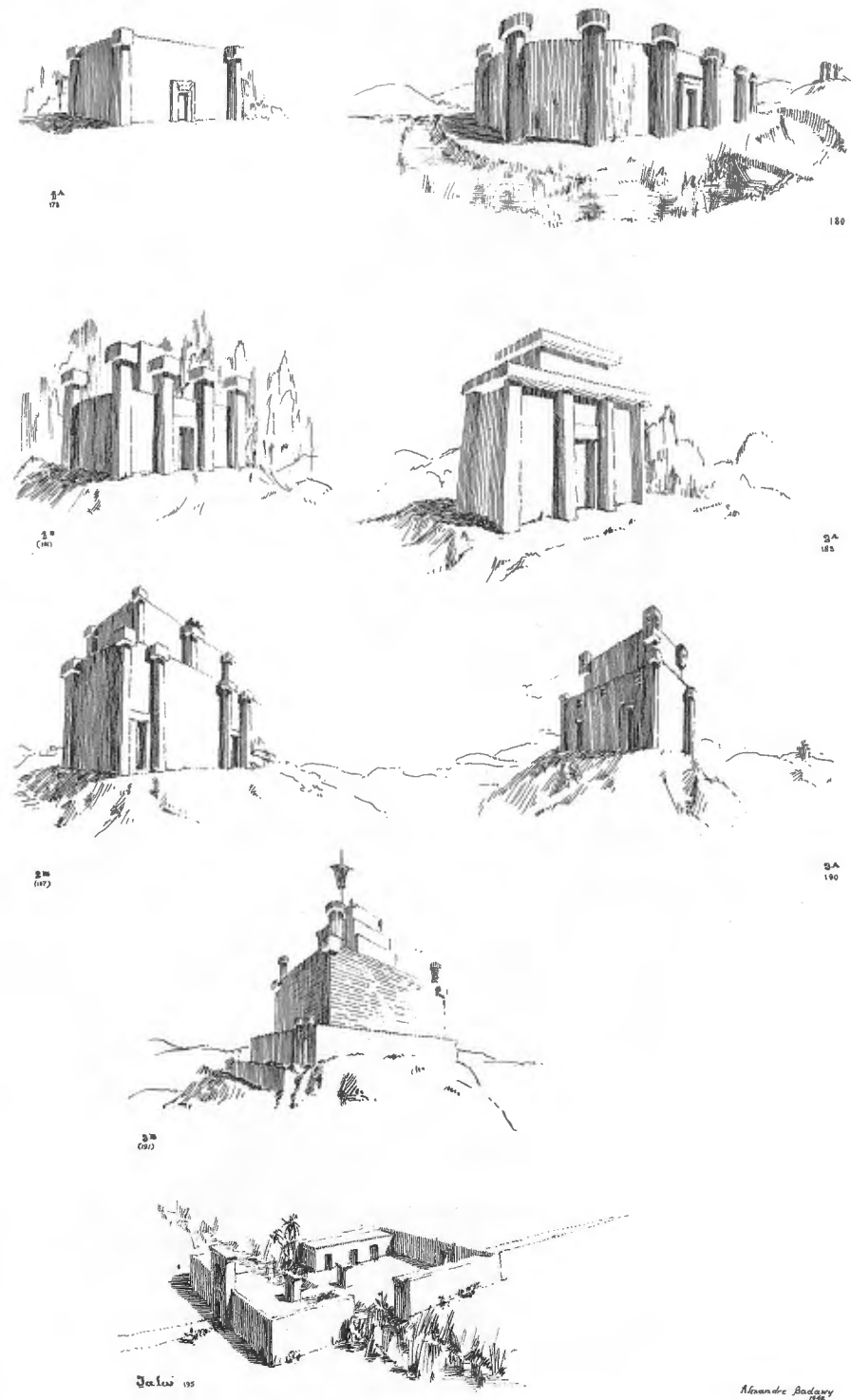
The military victories of the Egyptian armies in Syria formed a favorite theme of the contemporaneous artists who soon included them in their official repertoire for the decoration of temples. With Seti I begins the fashion of representing Syrian fortresses and fortified towns, a fashion that was to flourish for about one century and a half, until the reign of Ramses III. These stylized representations, however, are intended merely as illustrations of the texts that boast, more or less trustworthily, of deeds of valor. They never afford an exact representation of a structure, though they do provide extremely interesting and useful material for the comparative architectural study of Syrian fortification during the Empire.

Naumann ⁴⁸⁷ has classified the representations into three chronological groups: from the time of Seti I (1312-1298 B.C.), Ramses II (1301-1235 B.C.), and Ramses III (1198-1166 B.C.). The low reliefs of the earliest group represent fortresses in South Palestine of a uniform, presumably simplified type, characterized by an enclosure with four bastions and one or two doorways. Above the wall rises a second similar but smaller one, perhaps a citadel. The bastion seems to be crowned with a balcony with machicolations, possibly built on corbeling balks (fig. 234). The second group shows more types, varying according to the sites. The fortresses in Palestine are of the former simple type, with windows, whereas those in North Syria occupied by the Hittites are more complex and are characterized by lofty towers. The latest representations show both simple and complex types used by the Hittites all over Syria and Palestine.

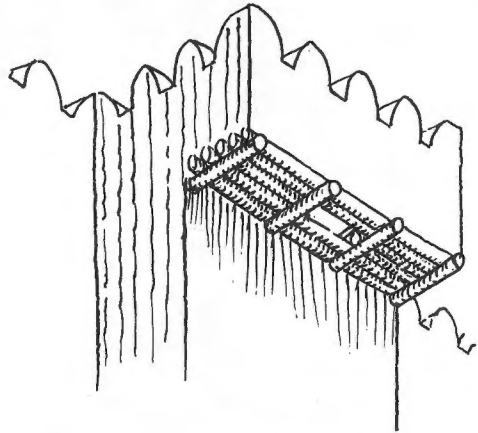
For the purpose of architectural study a classification of the various examples of forts into groups of types according to their enclosure walls can prove of some help:

Type Ia: Simple battlemented enclosure.

Type Ib: Simple battlemented enclosure with citadel.



233. Restored types of fortresses in Syria during the Empire after Egyptian representations on temples.



234. Restored perspective of a machicolated balcony in a Syrian fort.

Type IIa: Double enclosure with one doorway.

IIb: Double enclosure with two doorways.

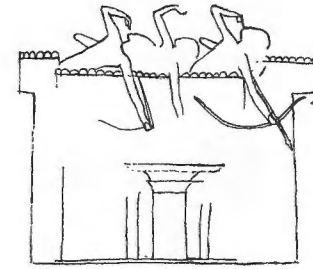
Type IIIa: Double enclosure with towers.

IIIb: Double enclosure with towers and citadel.

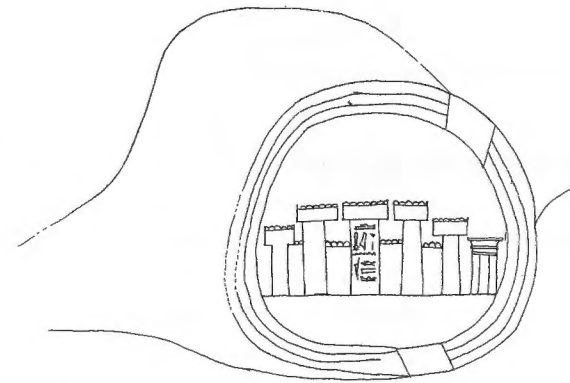
Type IV: Many enclosures.

TYPE IA (*fig. 235*). The simplest type of fort features a single vertical enclosure battlemented and opening through a central or side doorway. The top of the wall runs at one straight horizontal level, with semicircular, triangular, or rectangular ('Amarna) battlements, while bastions, probably rising at the corners, have cantilever machicolation similar to those represented in the paintings of Egyptian forts from the Middle Kingdom at Beni Hassan (see Vol. II, p. 199). The police posts and keeps at 'Amarna or the Libyan forts (Ramses III) are of this type. From three concordant representations the fortified circular enclosure of the famous Syrian town of Qadesh (*fig. 236*) would have been of the same type, with bastions crowned with balconies and machicolations and carried higher than the enclosure.

TYPE IB. SIMPLE ENCLOSURE WITH CITADEL (*fig. 237*). The fortification is similar to the preceding type, having a battlemented vertical wall with high machicolated bastions, two of which flank the doorway and a central tower. This isolated structure, the highest in the whole fort, seems to have formed a kind of citadel, perhaps built on some knoll of the rock.

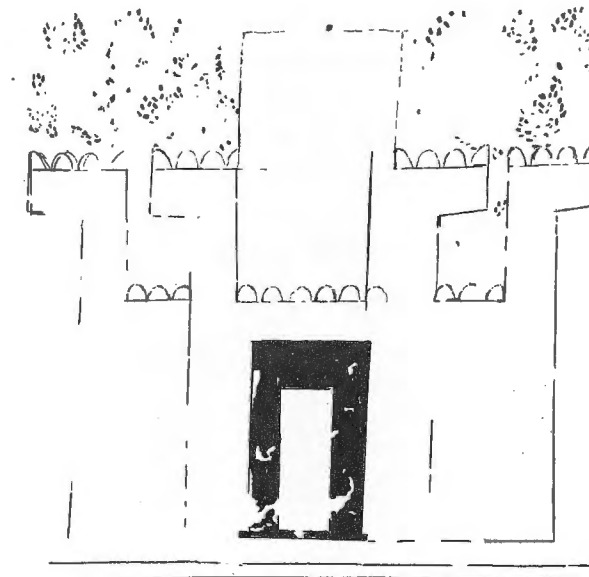


235. Simple type of stronghold represented on Egyptian temples.



236. Representation of the Syrian fortified town of Qadesh from the temple at Abu Simbel.

237. Representation of a fortified simple enclosure with citadel.



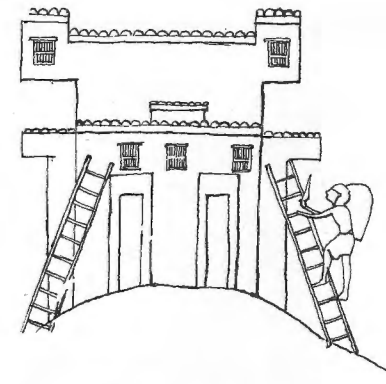
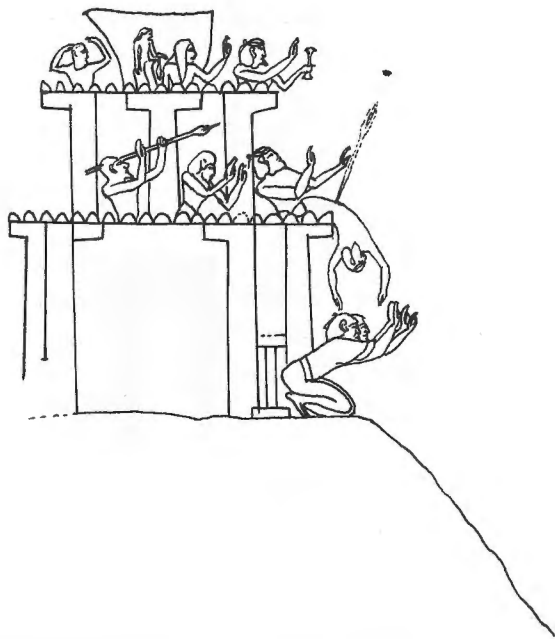


238. Representation of a double enclosure in a Syrian fort.

TYPE IIA. DOUBLE ENCLOSURE WITH ONE DOORWAY (*fig. 238*). Above the external wall of the preceding type appears the top part of an internal similar enclosure, which is narrower, battlemented, and provided with bastions. Such double enclosures, separated by a dry moat, formed a usual feature of the Egyptian fortresses from the Middle Kingdom in Nubia. The Syrian forts and *migdols* were erected upon a battered terrace or a hill.

TYPE IIB. DOUBLE ENCLOSURE WITH TWO DOORWAYS (*fig. 239*). In the outer enclosure a doorway flanked by two machicolated bastions opens at either end of the façade. The number of bastions on the inner enclosure can accordingly be different from those on the outer one.

239. Representation of a fort with double enclosure and two gateways

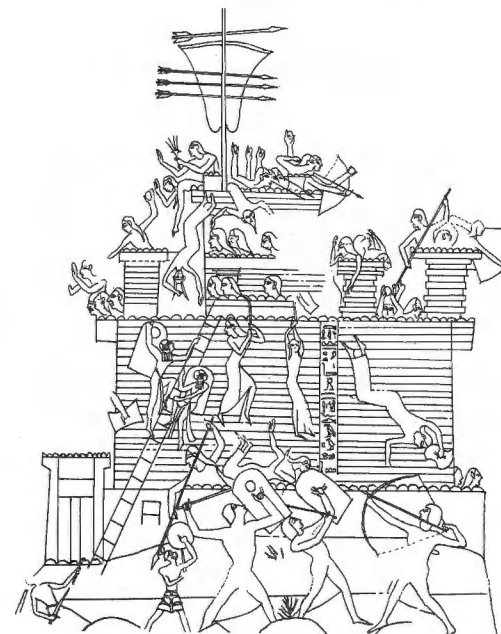


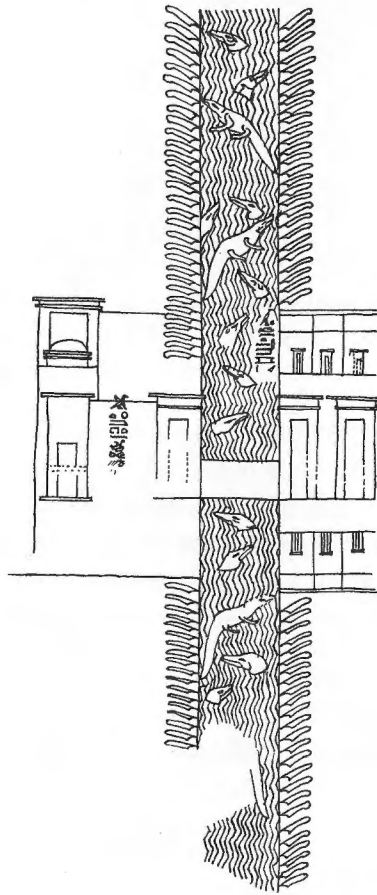
240. Representation of a fort with double enclosures and towers: town of Ascalon, from the Ramesseum low reliefs.

TYPE IIIA. DOUBLE ENCLOSURE WITH TOWERS. In the representation of a Libyan fort three small towers rise above each of the outer and inner enclosures. They seem to have served as observation posts. In the town of Ascalon, represented in the Ramesseum scenes (*fig. 240*), one single tower rises above the outer enclosure, while the balconies of the inner enclosure are enlarged to small cantilever chambers provided with windows, resembling the turrets in mediaeval military architecture.

TYPE IIIB. DOUBLE ENCLOSURE WITH TOWERS AND CITADEL (*fig. 241*). Most of the large Syrian towns are represented with two enclosures, the inner one being

241. Representation of a fort with double enclosures and citadel: town of Dapur.





242. Representation in plan and rabatted elevation of the frontier post at Tjalu.

surmounted by several towers and a central citadel. At least three battlemented walls rise at different levels, indicating presumably as many stories. The upper one is provided with towers similar to those of the enclosure wall itself. A curious feature is shown by some of the towers: projecting alternate horizontal courses, possibly an indication of masonry reinforced with wooden beams.

TYPE IV. MANY ENCLOSURES. Usually, three enclosures of the same width are shown, suggesting that they rose on a slope and were terraced like a step pyramid. Windows open in the upper enclosure or in the citadel crowning the

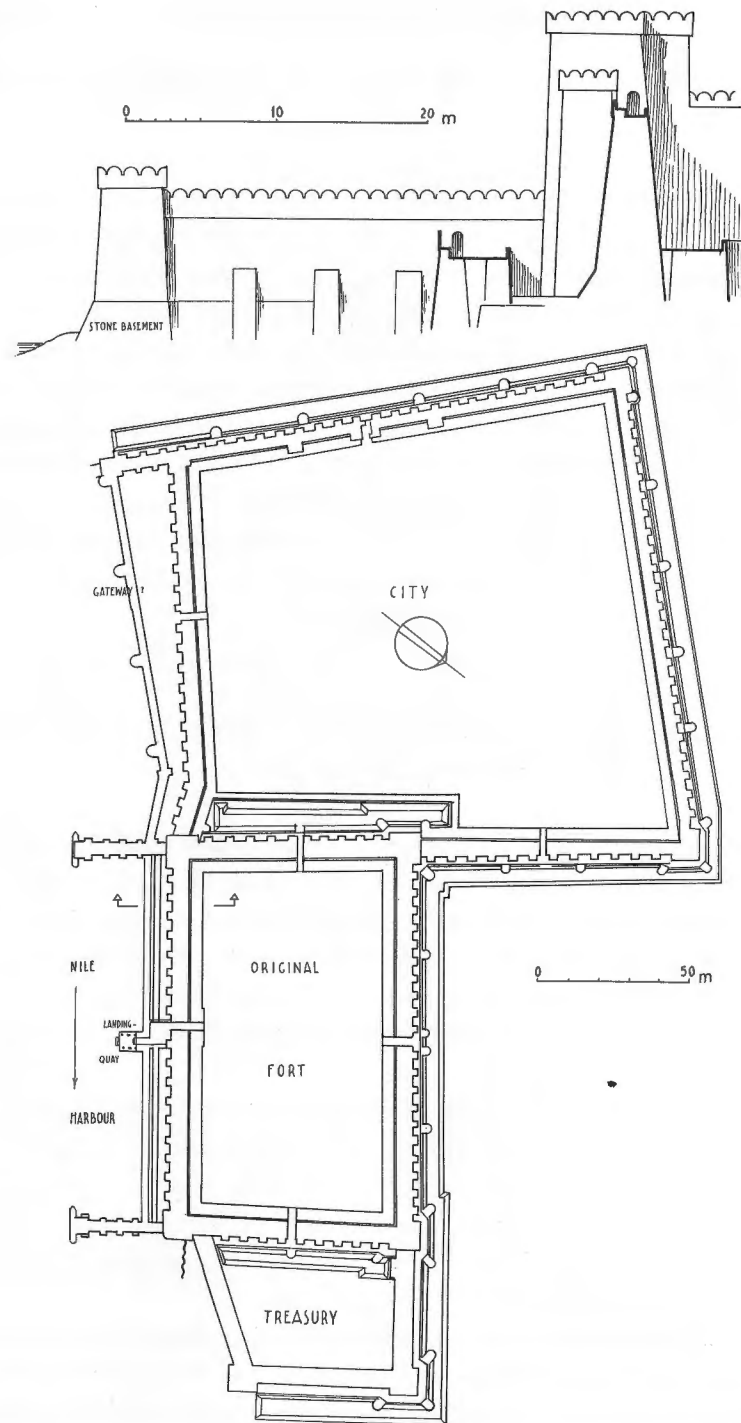
structure. Towers are occasionally erected on the citadel, topped with the emblem of the city.

THE FRONTIER POST AT TjALU (*fig. 242*). Frontier posts manned by garrisons were erected between Egypt and Asia. An interesting example thereof is that at Tjalu (Sile). A canal bordered with reeds and lively with crocodiles marks the boundary, and the structures stretch on both banks connected by a bridge. On the Egyptian side a court surrounded by a wall and having two portals, one toward the land and the other to the bridge, is flanked by two series of three rooms each. A portal at the opposite end of the bridge opens onto the remaining part of the buildings, consisting mainly of a court opening on the Asiatic side through a gateway topped by a window of appearance such as that at Medinet Habu. The frontier post of Tjalu was probably the one through which the armies passed on their way to fight the Mitanni and the Hittites during the expansion of the Egyptian Empire.⁴⁸⁸

Comparison of the Representational Evidence with the Contemporaneous Oriental Fortification

Egyptian drawings of Syrian or Libyan fortresses show a striking resemblance to those of the Late Assyrian Period (Assurnazirpal II, ninth century B.C.), or even the fortresses represented earlier on the boundary stones, *ḫudurru* (Melishipak, 1200 B.C.)⁴⁸⁹ from the Kassite Period. There are four main characteristic features that both sources of representations have in common:

1. A base, sometimes a huge serpent, probably some hill or artificial platform with a rounded profile.
2. An enclosure wall topped with rounded battlements (Egyptian representation) or stepped crestings characteristic of brickwork (Kassite and Assyrian), or triangular (Assyrian). Bastions, with projecting balcony or machicolation at the top, flank the gateways and corners of the structure. They usually rise high above the enclosure (Egyptian and Mesopotamian). In Assyrian representations the gates are always arched.
3. A second battlemented enclosure, with high rounded bastions, may be indicated within the outer enclosure.
4. A citadel may rise at one end above the second enclosure. All the walls



243. Restored plan of the fortified city of Mi'm ('Aniba in Nubia), and detailed section through the harbor.

are vertical and no openings are shown. Other examples feature many enclosures and windows opening in the bastions. A bronze model from Urartu shows clearly that the balconies were carried upon wooden baulks.⁴⁹⁰

Most of the fortresses represented on Mesopotamian monuments existed in the country itself, far from Syria. The resemblance of Mesopotamian and Egyptian representations, although about four or more centuries apart, seems to point to a similarity of the types in both lands, and in Syria. The gateways at Medinet Habu may well have been copies in stone of the typical fortified structure forming the gateway to Oriental forts, in Asia as well as in Egypt, at that time. Archaeological evidence seems to corroborate this assumption.

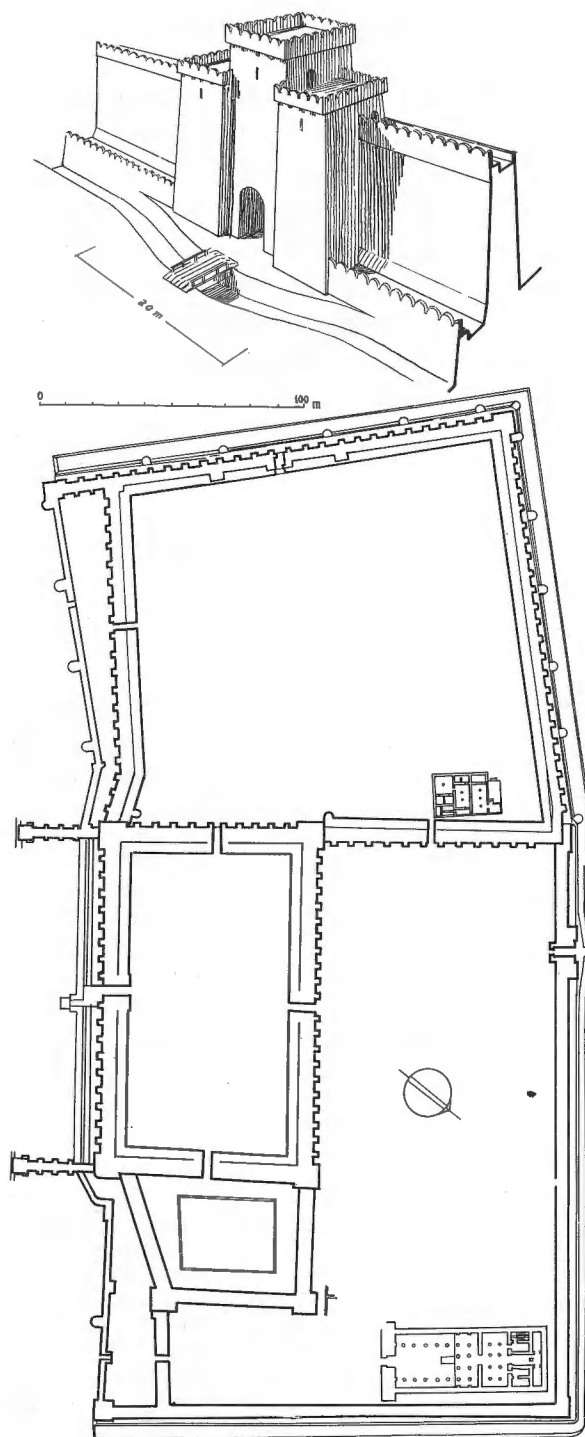
DESCRIPTION OF FORTIFIED STRUCTURES

*The Fortified City of Mi'm ('Aniba in Nubia)*⁴⁹¹

The city of the Middle Kingdom was enlarged into a rectangle (200 x 400 m.) by the addition of an area of 20,000 square meters enclosed within a simple wall (5 m. thick), with slanting base (1:7), to the north of the existing layout (figs. 243, 244). A dry moat (2.75 m. wide) lined with brick on a stone foundation surrounds the wall. The latter seems to have been battlemented on both faces. A large gateway opens in the western side (7.5 m. wide, 10 m. deep), flanked by two high towers and fronted by a bridge (3.5 m. wide) spanning the moat. The landing quay of the harbor was heightened on account of the higher levels of the Nile. A stone temple dedicated to Horus of Mi'm and dating from Thutmose I or III was erected in the northeast corner of the new area. In the northeast corner of the Middle Kingdom city were the remains of some large mansions of the 'Amarna type.

*The Fortified City of Buhen (Nubia)*⁴⁹²

The Middle Kingdom fortress, which had been abandoned ca. 1675 B.C., was reoccupied in the New Kingdom (after 1580 B.C.). The city enclosed within Middle Kingdom bastioned walls on a rectangular plan along the Nile bank expanded in the New Kingdom, especially to the north and the south. A new



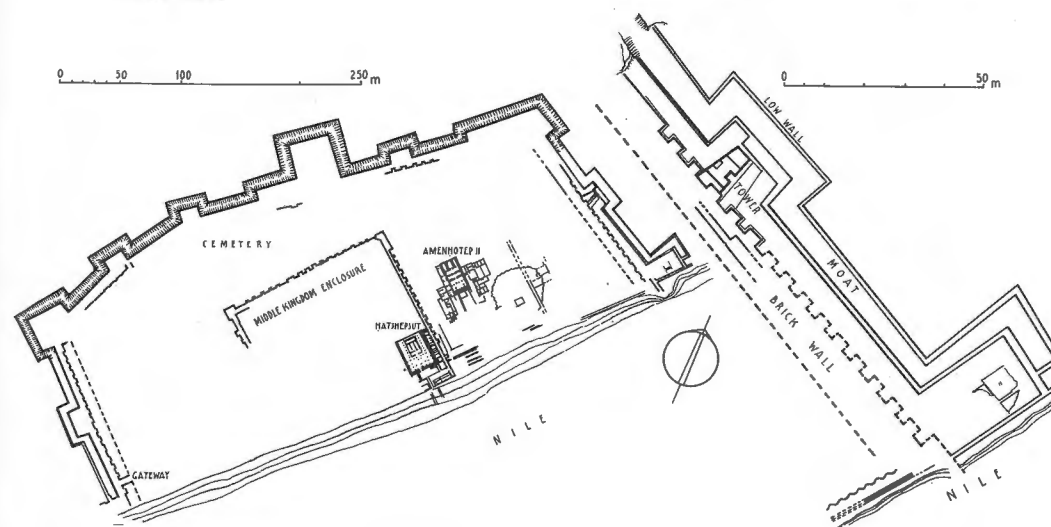
244. Restored plan of the city of Mi'm during the New Kingdom, and perspective of the western gateway.

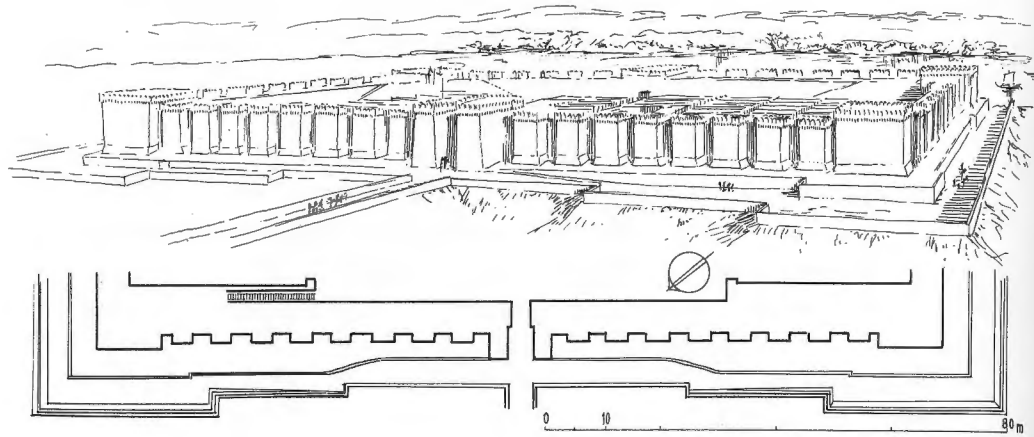
perimeter wall showing remarkable features was built, probably by Ahmose I, around the fortress, the township, and its cemetery (W.). It assumes a rectangular outline (200 x 500 m.) along the riverbank, with a slightly convex west side, and it embodies the Middle Kingdom wall on the east side (fig. 245).

The perimeter wall, more than 1 mile long, consists of a buttressed and steeply battered brick wall (3.5 m. deep x 6 m. wide), bordered on both edges by a low thin wall. The rock-cut moat has slanting sides and a flat bottom, and at various points assumes irregular salients, enclosing slight eminences on which towers on heavy stone foundations were probably erected, abutting on the wall. Along the north and south sides of the fortifications the moat could not be cut deep in the sand but was nevertheless continued as an empty level "obstacle," bordered by the walls. A gateway near the river opened at the north and south ends of the wall.

The wall was no massive structure but consisted of a framework of brick compartments, some of these used as magazines, others filled in as caissons with sand. Near the bank, sandstone foundations supported the brickwork. Buttresses (2 m. thick) reinforced the outer face, perhaps also occasionally the inner one. There seem to have been wooden balks inserted through the thickness of the walls, as in the Middle Kingdom fortresses, and also set

245. General plan of the fortifications from the New Kingdom at Buhen, and detail of the north side.





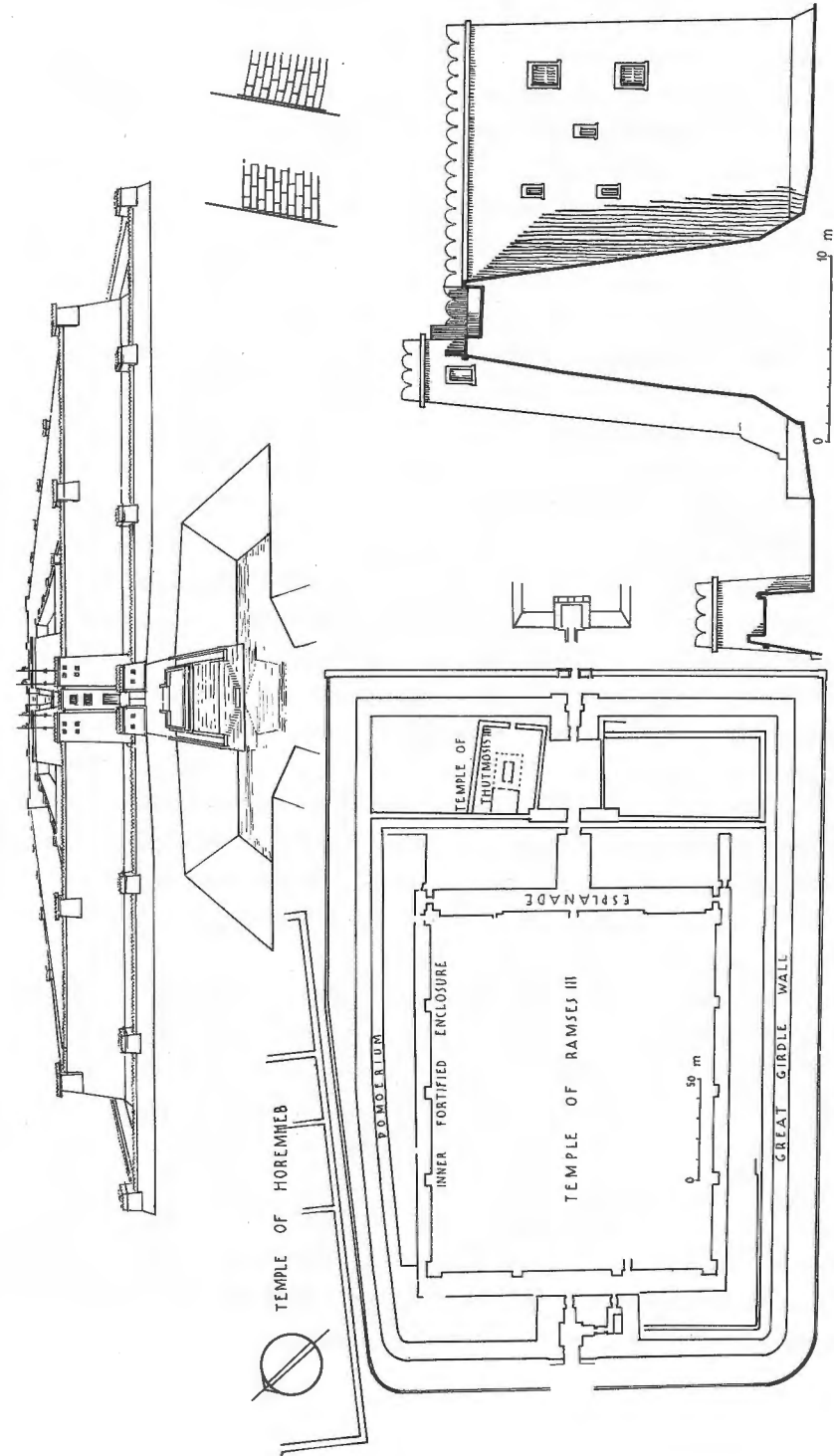
246. Plan of entrance façade and restored perspective of the fortress at Buhen during the New Kingdom.

vertically in the external face on the west side (cf. Hittite forts).

An interesting feature occurs in the northeast corner in the shape of a sinusoidal wall (0.2 m. thick), bordered externally (at a distance of 1.9 m.) by three rows of brick (0.1 m. thick) separated by one brick (0.3 m.) placed at intervals of 0.3 meter to form two series of caissons which are filled with sand. It has been computed that such a retaining wall would require only half the usual quantities of material and labor.

Recent excavations by Professor W. Emery (winter 1958-59)⁴⁹⁸ have disclosed that the walls of the fortress itself were rebuilt over the Middle Kingdom ones, on a simpler and stronger design (fig. 246). On the western façade (147 m. long, *ca.* 10 m. high) the bastions were enlarged, the two main towers of the gateway were cut back, and circular bastions of the Middle Kingdom fortifications partly demolished and built over. The earlier ditch was partly filled as a sunken road. A new rock-cut dry ditch (9 m. deep) ran at the foot of the wall. The eastern wall followed the alignment of the riverbank.

In the northwest corner were large public buildings such as the commander's headquarters, a two-storied structure abutting on the wall of the fortress, with direct access to the stairway of the rampart. It seems that this was the same structure dating from the Middle Kingdom. Doorways had inscribed wooden jambs and lintels, pavements were of brick covered with plaster, and



247. The great girdle wall at Medinet Habu: reconstructed bird's-eye view from the east, plan, section of wall, elevation of north face of the eastern gateway, and detail of brickwork with horizontal or "hanging" courses.

wooden ceilings were supported on wooden octagonal pillars painted red and set on stone bases. In the small rooms a new pavement was laid on the debris 0.45–1.0 meters above the Middle Kingdom pavement.

This extensive fortified town, a strong military outpost of the Egyptian Empire in the Sudan, was probably destroyed by the Kushite armies toward the end of the Twentieth Dynasty (1085 B.C.)

*The Fortified Enclosure of the Temple Area at Medinet Habu*⁴⁹⁴

The fortified temple complex at Medinet Habu is considered to be unique. A model of such a fortified enclosure is offered by Pharaoh Herihor (Twenty-First Dynasty) to the god Khonsu in a low relief of the temple at Karnak. Did Ramses III actually fear some invasion of Thebes or some internal revolt, or was it only a flattering reminder of his glorious military feats in Asia? Whatever the reason, the enclosure of the temple shows highly developed features of Egyptian fortification at that time, presumably akin to, or inspired by, contemporaneous Syrian fortresses. It is significant that for the description of the temple at Medinet Habu by Ramses III the scribe of Papyrus Harris used two words of Semitic origin: *'araty* for "ramp" of the enclosure wall and *tjakara*, "enclosed tower."⁴⁹⁵ The introduction of foreign elements from palatial or military architectures was a feature known also in other Oriental cultures. Another conqueror, Sargon II, describes much later in his palace at Khorsabad (706 B.C.) "a portico patterned after a Hittite palace," probably an element from the Syrian architecture of that time.⁴⁹⁶

The inner area consisting of the temple proper, the palace, and magazines, was surrounded by a wall fortified with bastions (fig. 247). When Ramses III enlarged the temple precincts outside these limits he surrounded them with a simple girdle wall whose northwest side slanted inward where it abutted on the earlier temple of Ay-Horemheb. This wall was provided with two great fortified gateways in the central axis, on the east and west sides. An outer wall parallel to the large one and separated from it by a moat formed the second part of this fortified enclosure. A passage along the internal face of the wall, a pomerium, was left for defense purposes, a feature of military architecture already known in the forts of the Middle Kingdom (cf. Vol. II, p. 203).

THE GREAT GIRDLE WALL. This is very thick, in brick (10–11 m. [20 cubits] thick), on a rectangular plan with rounded corners on the rear and set on a socle (1.5 m. high, 50° slope), with sides slanting both externally and internally. It has been surmised that at its top was a pathway (at 16.43 m. height) and a higher edge bordered with a crenellated parapet (17.2 m.) for defense purposes. It has also been assumed that there were small towers, "cavaliers," riding the wall similar to those of the external wall. Brick (43 x 21 x 13 cm.) was used with some mortar on the outside, but without any inside, in horizontal stepped courses in the socle and in slanting "hanging" courses in the battered wall itself. Mud plaster and whitewash covered the brickwork. The wall was destroyed toward the end of the Twentieth Dynasty.

THE OUTER WALL. The outer brick wall is not so high as the girdle wall, being only 4.4 meters above the outer grounds (corresponding to 2.4 m. on the inside), with small towers mounted on corbels and probably having battlements. The wall on the east side is faced externally with stone lining. Each entrance has a double guardhouse consisting of a long room with two windows on the outside and a door on the inner side. Ramses VI decorated the east side of the wall with low reliefs representing him before the gods.

THE MOAT. A moat (6.6 m. wide, 1.1 m. deep), probably of late Ramesside date, runs between the outer wall and the girdle wall on the north, west, and south sides, apparently as an outlet for water accumulating in the desert watercourse during storms.

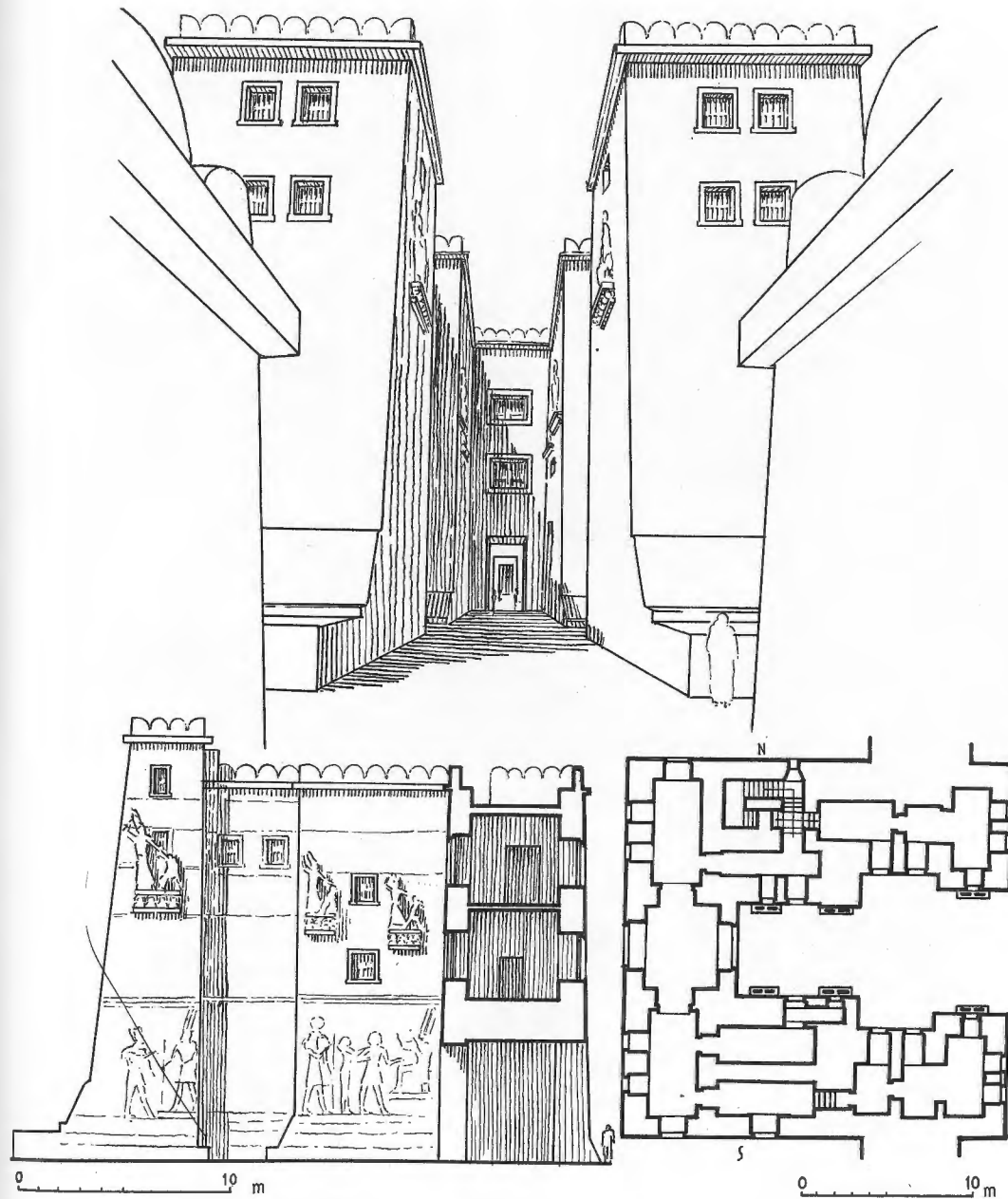
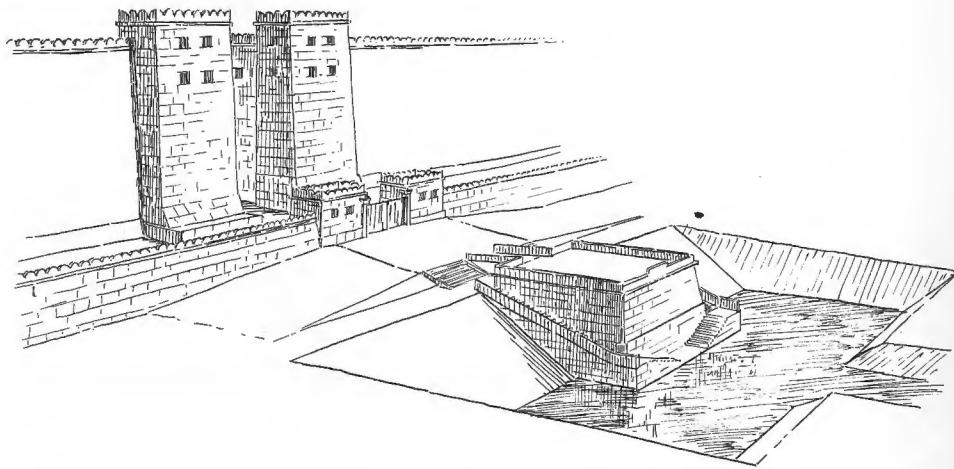
THE TWO GATEWAYS. In the center of the east and west sides of the great girdle wall are high gateways giving entrance to the Nile canal (E.) (fig. 248) and to the desert (W.). The west gateway is larger and more strongly fortified, probably because it was more liable to an attack from the desert. Both structures are similar and built in brickwork, or in stone on the faces that could be accessible to the enemy: front, court walls, and rear. The approach from the T-shaped canal assumes the layout of a high landing quay, bordered on either side by a lateral stairway.

THE EASTERN GATEWAY (fig. 249). The plan of both gateways is identical, consisting of a narrow court flanked by two towers rising 2 meters above the

girdle wall, with a doorway (3.8 x 5.7 m.) at the rear, closed by a heavy door reinforced with metal sheets which pivots on a large granite socket (pl. 66). The tower slants in front, above a projecting socle forming a basement, but has vertical walls on the court (7.1 m. wide). This court widens (9.2 m.) then narrows again (5.5 m.) between two projecting faces which rise up high and are provided with projecting basements, smaller than the front ones. This was intended to impart to the person entering the illusion of a second pair of towers beyond the front pair. No window opens in the front towers except on the third floor, while to the rear of the passage there are lateral windows on the second floor and two large windows of appearance above the central doorway, on the second and third floors. High on the protruding faces around the court are three corbel slabs, each supporting a row of four heads of prisoners, carved in the round as if they were lying prone on their chests and were engaged in the masonry. Above each slab a statuary group, presumably in wood, represented Pharaoh slaying a kneeling enemy.

A most interesting feature of the façade on the court is the use of optical illusions to emphasize the perspective and make the court look deeper. A

248. Restored perspective of the landing quay in front of the eastern gateway at Medinet Habu.



249. The eastern fortified gateway at Medinet Habu: reconstructed perspective, longitudinal section, and plan of the third floor.

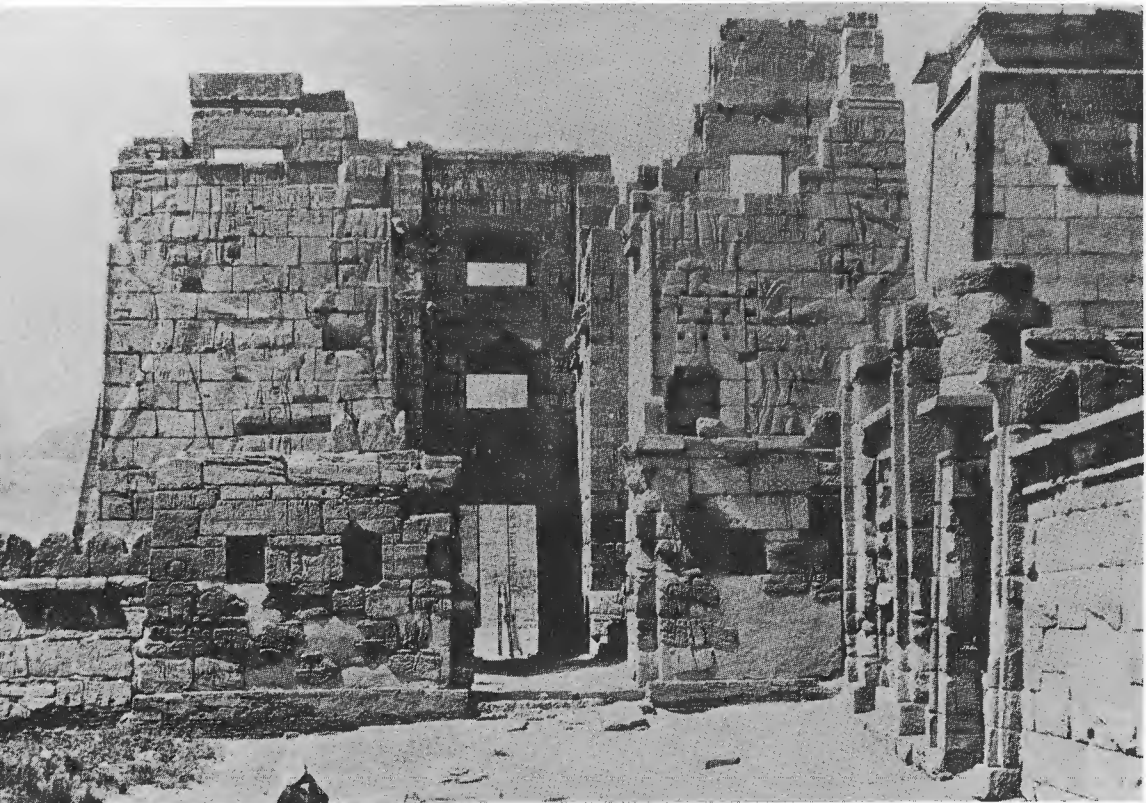


Plate 66. The eastern fortified gateway of the mortuary temple of Ramses III at Medinet Habu.



Plate 67. Back of the eastern gateway of the mortuary temple of Ramses III.

planned decrease in the dimensions of the corresponding elements occurs gradually from the front toward the rear; hence the levels and widths of the corbel slabs, the heights of the basements in the front tower and in the tower-like projections in the rear, the spacing between the towers and the projections mentioned above, and the decrease in the levels of the windows from the front toward the rear.

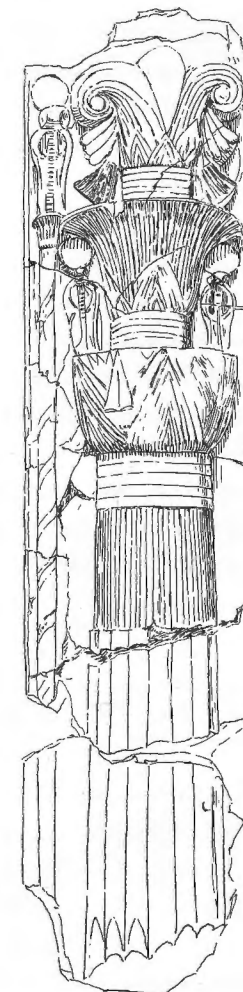
The walls are decorated with painted low-relief scenes of Pharaoh before Amun, the largest scenes being the lowest ones (pl. 67). This arrangement was probably intended to foster an optical illusion (such was certainly the aim in the decoration of the sanctuary in the Great Temple of Ramses II at Tanis).⁴⁹⁷

Only the central body of the gateway is built of stone, abutting on white-washed brick structures on both sides. A ramp or stairway leads along the south wall to the second floor from which presumably a staircase in the north tower once rose to the third floor and to the terrace. The room (4.15 x 4.5 m.) above the gateway passage, built in stone and roofed over with a wooden ceiling, has a large window with wooden grating and folding shutters in the east and west walls, probably used as windows of appearance. Two doors connect this room with vaulted chambers to the north and to the south. The plan of the third floor is identical to that of the second floor, with the addition of a few rooms set at a higher level in both the north and the south towers. It is noteworthy that four of the third-floor windows open behind the statuary groups set on the corbel slabs, which allows the presumption that they served solely for gaining access to these statues, the more so since other windows open in the same rooms for illumination.

The terrace is flat, set at various levels. The battlements, however, run at one level on the towers and at a lower one on the abutting girdle wall.

The ornamentation of the walls is in low relief for the stone faces, and shows scenes from the royal private life such as Pharaoh playing chess with maidens of his harem. Unassuming paintings of baskets of fruit and flowers cover the wall behind the door- or window-leaves, this area usually being hidden. Tapestry patterns or rows of vultures form the painted ornamentation on the ceiling.

THE WESTERN GATEWAY. The plan of the western gateway is similar to that of the eastern one but with larger dimensions, since a smaller lateral gate opens from the court southward and contains a stairway to the gateway and the wall.



250. Engaged composite column in the western fortified gateway of the mortuary temple of Ramses III at Medinet Habu.

This is probably an ingenious device in military architecture to allow the soldiers to rush out and attack the besiegers unexpectedly.

The style and ornamentation of the gateway seem to have been the same as in the western gateway. Two slabs with engaged columns brilliantly colored had probably been set in the brick rooms (fig. 250). The column has a cluster shaft surmounted by three superimposed capitals: a half-open lotus, an open

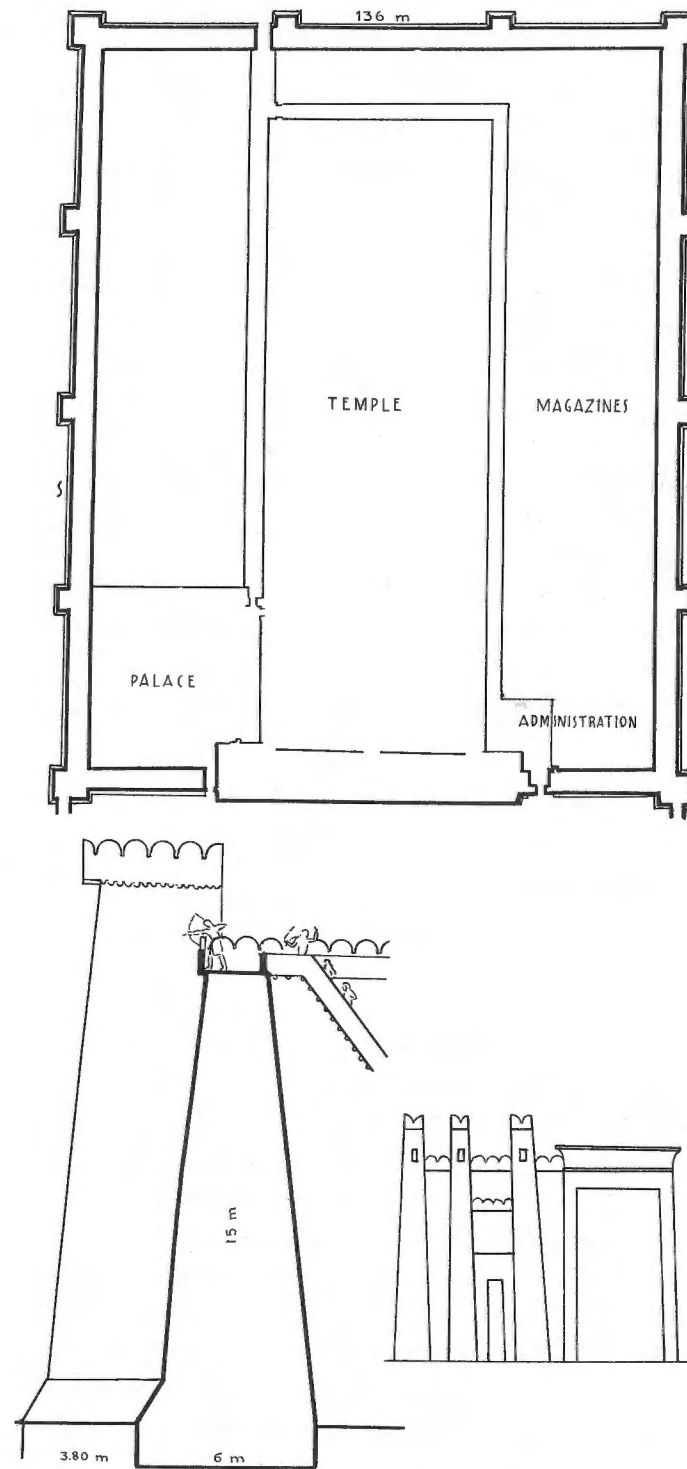
papyrus of smaller diameter above it, and at the top a lily capital, again of smaller diameter (color plate XII**b**). It is presumed that the columns with such a three-staged capital represent an actual cluster of stems with a lily at the top, a papyrus below it, and farther down lotus blossoms.

THE INNER ENCLOSURE WALL (fig. 251).⁴⁹⁸ The original layout of the temple and its dependencies—palace, administration buildings, and magazines—is surrounded with a brick wall on a rectangular plan (136 x 171 m.), with quadrangular bastions. The wall (15 m. high, 6 m. wide) is battlemented on both faces and set on a slanting socle (1.7 m. high) on the outside. It is noteworthy that the external face has a slight convex batter. Towers project 3.8 meters from the wall, and presumably rose higher and were battlemented similar to the wall (42–47 m. apart). The foundations are set 2 meters deep on gravel. The east side of the enclosure embodies the pylon of the temple. It has been propounded that the only places where there could be stairways rising to the top pathway (2 m. wide) are in the northeast and southwest corners of the plan.

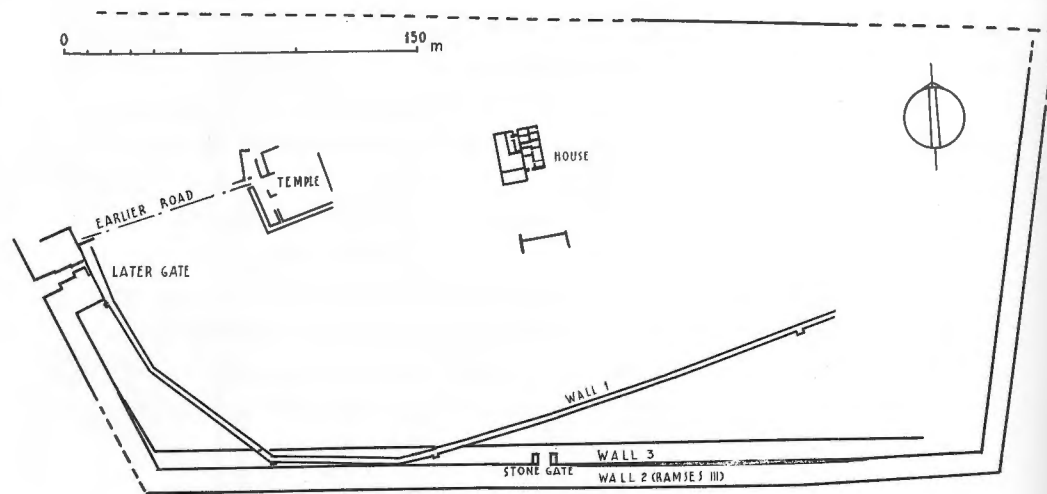
*City Enclosure Wall (Tell el Retaba)*⁴⁹⁹

This city is located in the Wadi Tumilat, in the desert east of the Delta, and is possibly the Pithom of the Bible (Egyptian Per-Atum) (fig. 252). The city walls were built at three different periods along a rectangle (E.-W.). The earliest brick wall (1) is quite irregular in plan (123 in. [3.12 m.] thick), bending at three points and having four bastions projecting about 50 inches (1.27 m.). It seems to have ended to the west with a gateway opening in the axis of the great temenos wall of the temple.

Ramses III enclosed the city with a larger and thicker wall (374 in. [9.5 m.]), on a more regular plan (2). Its long side (E.-W.) runs close to one stretch of the earlier wall for a short distance and bends at its western end. A gateway was set near the earlier one, but had vanished by the Twentieth Dynasty. At the third stage a third wall was built (347 in. [8.81 m.]) contiguous to the second one on its inner face and overlapping the first wall (3). The western gateway was rebuilt, leaving only a narrow passage (22 in. [0.56 m.]) for persons walking in single file. A stone gateway was built in the middle of the south side.



251. Plan of the inner fortified enclosure, section of the south wall in the southwest corner, and later Egyptian representation of the fortified temple enclosure (Herihor, Temple of Luxor).



252. Plan of the city wall at Tell el Retaba.

Fortified Enclosure Wall of the City of Sesebi
(Sudan, Eighteenth-Nineteenth dynasties)⁵⁰⁰

The plan is rectangular (N.-S.), enclosing an area of 270 by 200 meters in flat country. The wall, about 4.65 meters thick, is in brick, provided with buttresses (3.15 m. thick) at regular intervals (2.65 m.). It seems that a gateway opened in every one of the four sides, not necessarily in the middle except for the southern one. A street was certainly stretching from the southern gateway northward, forming a main artery N.-S. Each gateway is paved and lined with stone, provided with a door sliding horizontally into a recess of the wall, which accounts for the greater thickness of the gateway. A drainage channel issues under the pavement in the axis of each gateway, probably for heavy rainfalls, a characteristic of the climate at that period (?) (see Fig. 32). Similar drainage channels form a customary feature of the gateways of Hittite forts (Sindjerli,⁵⁰¹ Troy, Arslan Tepe) and in Mesopotamian town gates.

THE ACHIEVEMENT OF MILITARY ARCHITECTURE

The Egyptians of the Empire were afforded the opportunity of gaining *de visu* information about Palestinian and Syrian military architecture, the latter being, in the northern districts, akin to the Hittite. The power of the country, owing mainly to its expansion abroad as a result of military victories and to its riches collected from the tribute of vassals, the booty from campaigns, and flourishing trade, resulted in an extensive program of fortifying the metropolis and its newly acquired possessions. If the fortresses in Egypt were actually similar to those they raided during their campaigns abroad and which they represented on the walls of their temples, one would expect to find among these representations elaborate examples of their own military architecture. The achievement consists in the versatility of the types: stronghold, fortress, and frontier post, as well as the isolated tower known since the archaic times. It is to be presumed that the New Kingdom architects still knew and used earth defensive works such as those from the Middle Kingdom and later in the Delta. The rational system of fortification, still featuring two types of plans—the rectangular and the one following the contour lines of the terrain—consists of a dry moat between double walls, a heavily battered wall in brick, with stone gateways, bastions, and towers with machicolations, and perhaps also a citadel. All these elements, as restored from the drawings and actual remnants, form a well designed and rationally fortified structure. The scale of the buildings has considerably increased from the usually limited one in the Middle Kingdom fortresses and settlements to the establishment of whole cities on the strategic routes to Asia or in remote colonies in the Sudan enclosed within fortified walls (Tell el Retaba, Sesebi).

The unique stone structure at Medinet Habu that imitates a fortified building shows, incidentally, besides the well-developed elements of fortification, a process of planning to achieve a host of optical illusions on both lateral walls of the entrance gateways, with the evident purpose of emphasizing perspective and space in a manneristic way.

From the comprehensive data provided at Buhen one can derive an idea of the evolution of military architecture by the comparison of the systems of fortification used at that same site during the Middle Kingdom and the New Kingdom. It is obvious that the architects of the New Kingdom did away with many unpractical elements such as the two spur walls flanking the gateway

and the outer range of wall, semicircular bastions, and the dry moat which had proved to be more hampering than useful, especially against numerous besiegers mounted on horses. This process of simplifying is allied to another one of strengthening the bastions and the towers of the main wall.

VI

Architectural Statuary

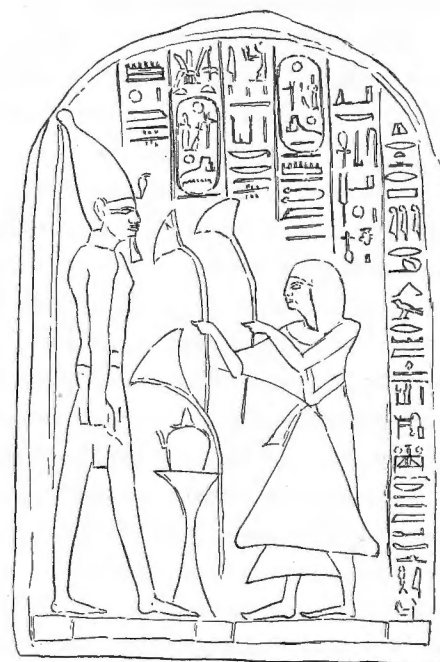
The use of architectural statuary increased considerably in the New Kingdom. Such elements as processional avenues bordered with sphinxes and colossi of the pharaohs, or even columns form the typical approach to the temple. In the temple proper the trend to exteriorize statuary, already apparent in the Middle Kingdom, grows with the distribution of large standing or seated statues of the pharaohs and gods around the open courts and even in the hypostyle hall and sanctuary of the rock-cut temple. Nowhere has this statuary simply a constructional or ornamental purpose. It can be described as fulfilling a two-fold aim, religious and symbolic. According to the ideology of the Egyptians such an aim could still be strictly functional, and a statue might be nothing more than a medium through which people implored either the deity living in the inaccessible sanctuary or the deified pharaoh in his capacity of mediator. In the latter case the statue is a concrete symbol of the power of the divine ruler, and the increase in the number and size of such colossi reflects the actual increase of his power during the Empire. It is no surprise that Ramses II had such a propensity for setting colossi in front of, and inside, the temples. But whatever was the initial motivation—perhaps to awe the populace—there is no doubt that the exteriorization of statuary illustrates a new democratic aspect of the relations between the people and the once inaccessible gods and pharaohs. Pharaoh was clearly invoked as a mediator. The “Scribe of the Treasury of the Temple of the Aten,” Penbuy, asks Amenhotep III in his inscription to induce Amun-Re⁵⁰² to give him a mortuary offering. This role of Pharaoh as mediator is now played by his colossi who are accessible to everybody.

THE IDEOLOGY OF MONUMENTAL STATUARY IN THE TEMPLE

The study of the use of monumental statuary in Egyptian architecture can be greatly enhanced by an examination of the ideology connected with such statues.⁵⁰³ Most of the colossal statues in the temples represented pharaohs, and as such they were cult images of the pharaoh himself. But whereas the cult statue of a god was usually of small size and concealed in a naos, that of a pharaoh was, as a rule, of colossal scale. The Egyptians themselves called these colossi "great statues" (*twt 'a*). They were erected in front on pylons and rock temples or in temple courts, where they could be seen and approached by the populace, who were actually allowed access to the courts. On stelae and tomb walls there are representations of individuals offering to such colossi as those of Mentuhotep III (Eleventh Dynasty), Amenhotep I, and Amenhotep III (Eighteenth Dynasty).⁵⁰⁴ Ramses II,⁵⁰⁵ however, was the pharaoh whose colossi were especially popular as cult statues in the Delta (see fig. 253) as well as in Upper Egypt. They were relatively numerous, and their introduction into religious architecture can be considered as a factor influencing temple architecture. Ramses II is depicted offering in person to a colossus representing himself both in his temples in Nubia and upon stelae of individuals.

Colossi bore names which were the same in different localities. It is noteworthy that such names were also those of regiments or ships transporting troops. This seems to indicate that the main aspect of the royal personality that happened to appeal to the people was the military one connected with his power. Or was it the result of a policy directed by the military-minded pharaoh?

Private citizens manifested their devotion to these colossi by dedicating stelae as ex-votos to be placed in some chapel or temple. Some sixty such stelae were erected by officers of the army of Ramses II, probably in the chapel of a military settlement in the Delta. The names of the colossi to whom the stelae were dedicated were partly known from the other colossi, some even in Upper Egypt and Nubia, and corresponded to names of certain regiments. Ramses II in the form of such colossi was accordingly the "patron" of these regiments. That there was such a cult in far-off settlements does not imply that they were situated near colossi or large temples. Portable statues and replicas of the colossi could play the same role. Statues of Amenhotep I were the object of a cult in the workmen's village at Deir el Medina, and those statues were probably replicas of an original in the temple at Karnak.



253. Stela of Mahu representing him adoring a statue of Ramses II.

The names of the colossi show certain aspects of the ideology of their cult. The colossus can be simply "The-God" (*pa netjer*), as on the stelae and in the rock temple at Garf Hussein, or "Montu-in-the-Two-Lands," a most popular name which occurs on no less than forty out of the sixty-seven stelae. We know also that there was a colossus named "Beloved-of-Atum" and others "Sun-of-the-Rulers" from the stelae and texts in the temples at Luxor, the Ramesseum, and in the rock temple of Hathor at Abu Simbel. The last name is similar to that of another colossus, "Ruler of Rulers."

From the representations on stelae we know that two of the four colossi mentioned were standing statues of Ramses II: "Ramses-Miamun-The-God" and "Usirmare'-Setepenre'-Montu-in-the-Two-Lands." The other two were statues of Ramses II seated on a throne and wearing the double crown of Upper and Lower Egypt: "Ramses-Miamun-Sun-of-the-Rulers" and "Usirmare'-Setepenre'-Beloved-of-Atum." It has been suggested that these colossi stood in front of a pylon, possibly at Pi-Ra'messe, the Delta residence of Ramses II, or at Qantir or Bubastis.

As we should expect, the persons dedicating the stelae to the colossi did so in the hope that their wishes expressed in the inscriptions would be granted. These were of a practical type for the welfare of the dedicating individuals. The Scribe of the Offering-Table Mahuhi inscribed the following prayer on his stela: "Adoration to thy ka, Lord of the Two Lands, Usirmare'-Setepenre'-Montu-in-the-Two-Lands, that thou mayest grant life, prosperity and health, a happy existence, the heart filled with joy, until the moment of reaching the necropolis in peace, for the ka of the scribe of the offering-table of the Lord-of-the-Two-Lands, Mahuhi" (fig. 253).⁵⁰⁶ The similarity of this prayer with those addressed to Anubis or Osiris is striking.

This aspect of the cult of the royal colossi can be considered as a form of popular religion, which proliferated devices and methods to reach the gods. There was a particular Amun in Western Thebes called "The-One-who-Listens," and numerous stelae were carved with rows of ears symbolizing the various times the god had answered a prayer. Such a popular cult, which afforded a direct contact between the individual and his god without involving the presumably costly and complicated intercession of a priest, allowed certain license; and often the god is rebuked and even threatened in case he does not grant the wish. Amenhotep I and his mother Ahmes Nefertari had become the patron saints of the Theban necropolis, and the workmen of the village at Deir el Medina often had recourse to them.

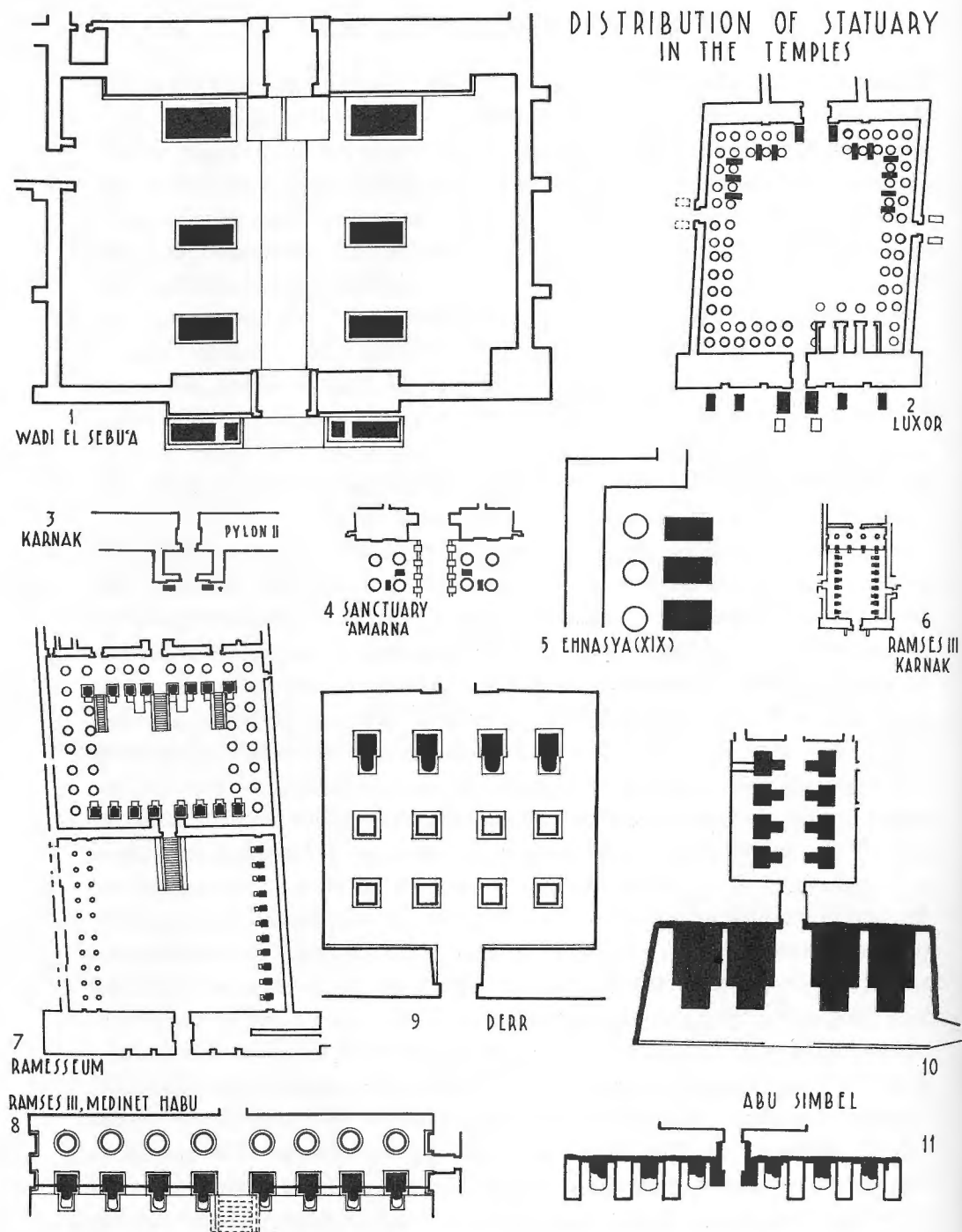
Pharaohs expressed again and again in their inscriptions their wish to help their people, and there is no doubt that putting their colossi as mediators in the external parts of the temples at the disposal of the people was one of these means of help. In addition, however, there could have been other less obvious purposes such as impressing the populace with their power, temporal or godly, and perhaps also the wish to minimize the ubiquitous intercession of the priesthood.

DISPOSITION AND TYPES OF STATUES

A monumental approach to a temple in the Middle Kingdom could be achieved by laying out an avenue or a ramp bordered with trees (Eleventh Dynasty temple at Deir el Bahari, temple at Hermupolis), or by placing Osiride statues of Pharaoh along both sides of a causeway (Deir el Bahari,

temple of Senusert I at Lisht). A pair of sphinxes might flank the doorway to the court which might be preceded by an alley bordered with sphinxes. It is not until the New Kingdom, however, that such avenues of sphinxes become the usual approach to the façade of the temple or the connection between two temples, such as the temple of Mut and Pylon X at Karnak, or even between two complexes of temples as distant from each other as those at Luxor and Karnak. The Egyptians called such an avenue "The-Way-of-The-God," because along it the god used to be carried out in procession at least once a year. Another new feature used as an approach to a temple is the columned avenue, such as that in front of the temple at Luxor, or the temple of Mut at Karnak. But the simpler avenue bordered with trees also prevails. Occasionally, sphinxes with heads symbolizing the god of the temple were used, such as ram-headed sphinxes at Karnak and falcon-headed ones at Wadi el Sebu'a in Nubia.

The portal or gateway to a temple, now opening in a pylon, is flanked by two or more colossi representing Pharaoh seated or standing, set against the façade so as to face the approach. Here again, as with the occurrence of avenues of sphinxes, there is no evidence for such a use before the New Kingdom. In the Great Temple of Amun at Karnak the two standing colossi face each other across the approach in front of the porch to the pylon (II) (fig. 254:3). The seats of the colossi are carved with symbolic scenes representing the union of the two lands, above rows of foreign prisoners of wars on the bases. Colossi in hard stones can attain huge dimensions corresponding to those of the pylons (19.90 m. in the mortuary temple of Amenhotep III; 15.6 m. at Luxor; 17 m. in the Ramesseum).⁵⁰⁷ The pair of colossi may be erected in the rear of the first or second court and may be accompanied by two smaller statues representing Pharaoh standing (Luxor; fig. 254:2).⁵⁰⁸ In the rock-cut temple at Wadi el Sebu'a each standing colossus of Ramses II is accompanied by a sphinx (fig. 254:1). In front of the pylon of the western hall in the temple of Ptah at Memphis (Ramses II) the statue bases are trapezoidal in plan, one long side being parallel to the axis of the hall and the opposite one, perpendicular to the pylon face. The pylon face happens to run askew to the perpendicular to the axis. Could this be an attempt at optical illusion? The climax in the use of colossi in any temple seems to be that at Abu Simbel, where the four colossi attain huge proportions and form the main feature of the rock-cut façade (fig. 254:10). The god to whom the temple was dedicated,



254. Distribution of architectural statuary in the courts and on the façades of temples during the Empire.

Re'Horakhty, is carved in a niche opening axially above the entrance. Nowhere else does the mania of Ramses II for colossi result in such a bold and impressive achievement, and nowhere else were the colossi relevantly located as in that temple, set at the gateway to the farthest lands of the Empire, to inspire awe and submissiveness in the hearts of the conquered peoples. This purpose is conveyed by the carving of the eyes gazing intently down at the crowd (see pl. 40). The colossal scale of the statues at Abu Simbel is surpassed, however, by that of the four standing statues, also cut from the rock, in front of the eastern face of Gebel Barkal (Sudan). The badly weathered colossi must have risen to about 100 meters.⁵⁰⁹

In the smaller temple at Abu Simbel the standing statues are set in the façade in recesses cut to their size (fig. 254:11). Here architectural integration has been perfected: the colossi of Ramses II and his Queen Nefertari seem, like the much earlier statues in a false-door of the Old Kingdom, to issue from the apertures of the rock; but they are no longer isolated figures, and they certainly form a part of the constituent elements of the façade of the temple. A striking parallel, though on a smaller scale, is found in the statues of gods and goddesses built in brickwork in the recessed panels on the external walls of the temple of Inanna at Warka, from the Kassite Period (fifteenth century B.C.).⁵¹⁰ The Kassite deities symbolically emerge from the mountain and hold vases from which issues a continuous double stream of the Water of Life flowing about the whole temple onto the mountainous ground.⁵¹¹ The deity of the temple of Hathor is the cow Hathor, whose statue stood in the inner sanctuary as if issuing forth from the sacred mountain to protect the pharaoh beneath her head. Were the royal colossi of the façade supposed to transfer this godly protection to the people and assume a function similar to that of the goddess issuing from the mountain? This idea would be similar to that of the location of the statue of an Assyrian god in a deep niche cut in the side of a ziqurrat. The god was supposed to come forth from the mountain symbolized by the ziqurrat.⁵¹²

The feature of a porch fronting the pylon is common in the temples at 'Amarna and later at Karnak, although it could have occurred earlier in structures of light perishable materials. Between each pair of columns in the porch facing the approach to the sanctuary at 'Amarna and along it there is a standing statue of Pharaoh Akhenaten (fig. 254:4). This location seems to explain the role assigned to a colossus fronting a temple as being that of a mediator to the people approaching the temple. Let us remember that in Assyria the king had

also the function of a mediator between the people and the god.⁵¹³ In the exclusive religion of the Aten, where no other god was tolerated besides him, could the status of Pharaoh have been that of a full deity? Such free-standing groups representing Pharaoh and the queen are also set between the columns of a portico bordering the court of the Aten temple. Two standing statues of Akhenaten adjoin two stelae on the platform of the altar in the sanctuary. Prayers were addressed to the Aten or to Akhenaten as a mediator or prophet. Nowhere is the process of mediation expressed so clearly as on the numerous stelae representing the royal family receiving life from the Aten, and being asked to bestow it in the shape of favors.⁵¹⁴ A statue of Akhenaten bearing a tablet for offering proves that this pharaoh never pictured his own status as that of a "god-king." Free-standing colossal statues were also placed in front of the intercolumniations (first court at Luxor, third hypostyle hall in the mortuary temple of Ramses III), or in front of the columns (court of Herishef at Ehnasya, Nineteenth Dynasty) (fig. 254:5). Statues of the gods are sometimes set in the hypostyle hall or even in the sanctuary of the temple, and rarely in the court. They are always larger than life-size, sometimes colossal, and often abut on pillars. Osiride statues of pharaohs occur in two rows facing each other along the longitudinal axis or form part of the portico in the court of the rock-cut temples at Garf Hussein and Wadi el Sebu'a (Nubia), as in the small temple of Amun (Ramses III at Karnak; fig. 254:6). The most common distribution, however, is as a front row in a portico stretching along the side of a court preceding a colonnaded court (Thutmose III, Seti I at Thebes) or hall (Ramesseum; fig. 254:7; temples of Merneptah, Ramses III at Karnak and Medinet Habu) (fig. 254:8). This portico is a typical element of the mortuary temple at Thebes in the New Kingdom. It usually stands higher than the level of the court, involving a terraced treatment of the façade to the inner temple. In two temples there seems to have been a reduplication of the portico along the opposite side of the court, as a lower level portico (Ramesseum, Merneptah [?] at Thebes). In all these varied uses the Osiride statue really forms part of the pillar on which it abuts and it has become completely integrated with the architecture of the portico, although it does not play any structural role. It is an element known as the Osiride pillar; and the statue is often carved out of the same courses as the rectangular pillar on which it abuts. In one temple two rows of rectangular pillars and a third row of Osiride pillars, the latter fronting the façade of a second hypostyle hall, form the unusual distribution of the supports of the first hypostyle hall (rock-cut temple at Derr; fig. 254:9).

The earlier distribution of Osiride pillars, the statues of which represent Queen Hatshepsut as a bearded mummified Osiris in her temple at Deir el Bahari, is somewhat akin to that in the typical Osiride porticoes. On the uppermost terrace the axial approach is flanked by the two wings of a double portico having an outer row of Osiride pillars ending on two massive antae of masonry, each fronted with an Osiride colossus (7.8 m.) erected at the lower level of the first court.

Another peculiar distribution is that of an Osiride portico running on one side only of a court, opposite to and in clear connection with the entrance portal to the royal palace adjoining the mortuary temple (Ramesseum, fig. 254:7; temple of Ramses III at Medinet Habu, fig. 254:8). The pharaoh or the ritual procession issuing from the palace on its way to the temple would thus face the Osiride statues.

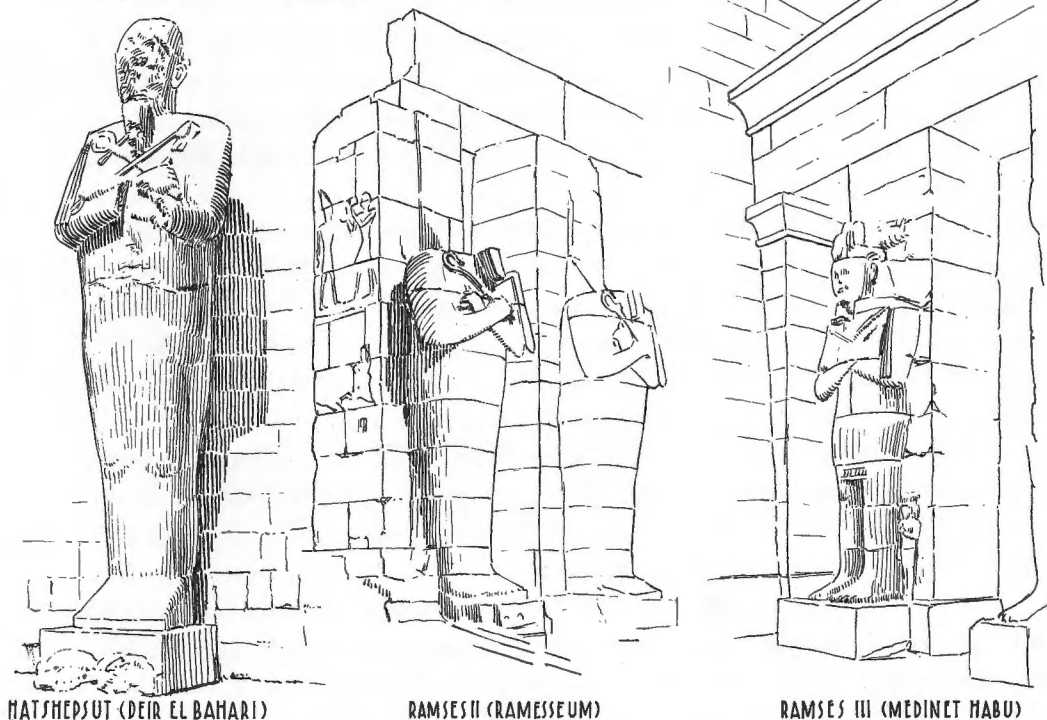
Farther in the interior of the temple, Osiride pillars occur on two rows facing each other along the longitudinal axis of the hypostyle hall. This is common in the rock-cut temples in Nubia (Garf Hussein, Wadi el Sebu'a, Abu Simbel).

Still farther in the innermost part of the temple, statues are integrated with the architecture. For the first time four large statues were set in recesses in both side walls of the sanctuary in Hatshepsut's temple at Deir el Bahari. In the peristyle court preceding it ten statues of the queen stood in niches.

EVOLUTION IN THE TYPE AND STYLE

This is not an appropriate place for a discussion of the degree of faithfulness in portraiture of the architectural sculpture. It only needs to be pointed out that there seems to have existed a general trend toward a high fidelity,⁵¹⁵ even in such large-scale colossi as those at Abu Simbel. The heads of Ramses II, as is shown by photogrammetry and photography, feature the same peculiar traits of the conqueror as are found in smaller "atelier" statues (Turin Museum). The extensive use of paint on limestone and sandstone statues would corroborate this assertion that monumental statuary aimed at portraiture. The broken-up statues of Hatshepsut had retained their vivid colors, but the granite ones show the polished grain of the stone with only a few features emphasized with paint.⁵¹⁶

OSIRIDE PILLARS



255. Views of types of Osiride pillars

The Osiride pillar evolves in its form and style from the Eighteenth Dynasty to the later Ramessids, when it disappears (fig. 255). The form is the typical mummiform Osiris figure, clad in the narrow sheath, both arms crossed over the breast and holding scepters, both feet on a line, and the head wearing the Osirian crown. In the later examples (Medinet Habu), however, the figure represents Pharaoh in his ceremonial garb, both feet on a line, but bare from the knees down, while two small statues of the queen stand beside the larger one. The crown, still that of Osiris, usually reaches the level of the architrave or lintel.

In style there is probably less difference between the fine and elegant monolithic Osiride figure of Senusert I (Twelfth Dynasty) and that of Hat-

shepsut (Eighteenth Dynasty at Deir el Bahari), than between the latter and the clumsy and massive figure of Ramses III at Medinet Habu. Unlike the seated colossi, which were monolithic, the Osiride statues were carved in the masonry of the pillars (Hatshepsut, Ramses II, Ramses III). Stylization, with its most successful characteristics apparent in Hatshepsut's Osiride pillars,⁵¹⁷ is still prevalent later in those of Ramses II in the Ramesseum. The proportions, however, lack the elegance of the earlier figures, but it can be said in their favor that an excessive simplification of their shape into a rectilinear outline and squared modeling has even increased their architectural affinity. A similar inelegant sturdiness is apparent in the colossi and Osiride pillars of the same pharaoh at Abu Simbel, a feature that has been interpreted as being planned to convey an effect of power. With the clumsy massiveness of the figures of Ramses III at Medinet Habu, however, this pretense can hardly be supported, although it has been proposed by Hölscher.⁵¹⁸

Architectural statuary also occurs in domestic and military architecture. At 'Amarna, in the so-called broad hall court preceding the Great Palace, standing statues of Akhenaten and his wife border the area, set on a staggered line on both sides of the entrance porch. This treatment reminds one of the Osiride pillars facing the entrance to the palace in the later mortuary temples at Thebes.

In the first palace of Ramses III at Medinet Habu the window of royal appearance forms the central item of a great composition of low-relief scenes of royal victories. Under the sill a sweeping horizontal line of heads of prisoners sculptured in the round juts out from the wall face, as if representing prisoners lying prone under the feet of Pharaoh. The motif is outstanding in its bold and faithful rendering of the ethnic characteristics. Sculpture in the round serves here to symbolize the overwhelming power of Pharaoh.

More of the same symbolic statuary was integrated in the pseudomilitary gateway to the complex of Ramses III at Medinet Habu. Here again six corbel slabs protrude from the side walls, high above the entrance passageway, each supporting a row of four heads of prisoners sculptured in the round. A statuary group, probably in wood, was fixed to the walls above each slab. The subject featured is again Pharaoh smiting a kneeling enemy—the stereotyped scene symbolizing victory. The whole composition uses its architectural as well as its sculptural elements to form optical illusions to emphasize the depth and, ultimately, the scale of the passageway.

AN APPRECIATION

The development of architectural statuary was carried forward from its formative stages in the Middle Kingdom by further evolution in the exteriorization, the increase in scale, and the elaboration of façade composition featuring statuary as a dominant element.

Six characteristic uses of statuary can be summarized.

1. The Osiride pillar attains its standard form where the stylized statue is intimately linked to the masonry pillar behind and is set upon a base protruding from the latter pillar. It is commonly used in rows to form typical porticoes in temples, and has a symbolic involvement.

2. Architectural composition freely uses rows of free-standing statues in the court of a palace.

3. The exteriorization process is carried forward with the common use of paired colossi in front of the pylon of the temple.

4. Architectural composition occasionally seeks its dominant elements in colossi cleverly integrated in the façades of rock-cut temples (Abu Simbel).

In the larger temple the typical pair of colossi is reduplicated and attains huge proportions. They are intimately connected with the façade, even embraced by the two slanting buttresses cut in the rock on both sides. In the smaller temple the distribution of statues in recesses, known earlier in the causeways of Middle Kingdom temples, exteriorizes in a sweeping alternance of standing colossi in recesses with slanting buttresses between them supporting the crowning cornice. In both compositions statuary is the dominant feature, carried to its maximum emphasis without impairing unity or scale.

5. In the unique case of elements in the round, protruding from the face of walls at Medinet Habu and distributed so as to enhance the optical illusion fostered by the layout of the architectural elements, statuary also plays a basic role in composition. This role is more integral than that of the statuary in the pediments and metopes of Greek temples, and can be compared to the role of the innumerable statues in the recessed porches of Gothic cathedrals. Perfect integration of statuary and architecture had been attained by the Ramesside master builders in highly impressive compositions around the thirteenth century B.C., especially in the rock-cut temples in Nubia (Abu Simbel).

6. The proportions of the statues seem to alter, even to become deformed, to convey a stronger impression of power (Ramses III), a process already

known in the earliest times (statue of Neterikhet Djeser, Third Dynasty; Cairo Museum). To the original role of the royal colossus as mediator between the deity and the people another purpose, with a political implication, has been superimposed.

VII

Garden Architecture

To the Egyptian the garden was an essential element in life. He was happy when he could afford one laid out in front of his house or tomb chapel. He thought that the gods also liked gardens around their temples, and he did not fail to provide each temple with a garden. Texts and representations unanimously point out this important role played by garden architecture during the New Kingdom.

EVIDENCE FROM TEXTS

No text fulfills our wish to have a picture of the garden of a town house, but two literary descriptions of a country estate mention the luxuriant cultivated grounds around a villa of the New Kingdom. The owner is undoubtedly enjoying his garden, as he is told: "You sit in their shades and eat their fruit. Wreaths are made for you of their twigs, and you are drunken with their wines."⁵¹⁹

Much more adequate information is supplied by texts concerning the gardens of tomb chapels and mortuary temples. A description is given in the unique text where Pharaoh Ahmose speaks of the pyramid and tomb chapel he planned to make for his grandmother Queen Tetisheri: "Its lake shall be dug, its trees shall be planted."⁵²⁰ This calls to the mind the typical wish in numerous funerary texts that the deceased might walk under the trees of his garden and drink the water of its lake. Queen Hatshepsut relates on the walls of her mortuary temple at Deir el Bahari how she complied with the wish of the god Amun-Re', her father, to have a grove of myrrh trees "for ointment for

the divine limbs": "I have hearkened to my father . . . commanding me to establish for him a Punt in his house, to plant the trees of God's-Land beside his temple, in his garden, according as he commanded. It was done, in order to endow the offerings which I owed. . . . I have made for him a Punt in his garden, just as he commanded me, for Thebes. It is large for him, he walks abroad in it."⁵²¹ Breasted presumed that they could have planted the myrrh trees on the terraces of Deir el Bahari itself, although they could have grown more suitably near the temple of Amun at Karnak. The theory that the myrrh trees were planted at the mortuary temple of Deir el Bahari is corroborated to some extent by the occurrence of such a garden about the later mortuary temple of Ramses II at Abydos: "He planted many gardens, set with every (kind of) tree, all sweet and fragrant woods, the plants of Punt."⁵²² Fragrant trees were perhaps an essential element of the pharaoh's funerary garden. Ramses III describes the lake and garden in his mortuary temple at Medinet Habu: "I dug a lake before it, flooded with Nun, planted with trees and vegetation like the Delta."⁵²³ And further: "It was surrounded with gardens and arbor-areas (lit. *places of chambers of trees*), filled with fruit and flowers for the two serpent-goddesses"⁵²⁴ (the expression "chambers-of-trees" was rendered by "arbor-areas," probably nurseries for young trees).

The temples of the various gods were provided with gardens in decorative layouts, as a source of flowers, vegetables, and even wine and olive oil. Texts are quite definite as to this specific purpose. Wine and *shedeh*-liquor were presented together with vegetables and flowers as a daily offering to the gods, while olive oil was used "to light the flame"⁵²⁵ in the sanctuary.

Of the temples that benefited by the largesse of pharaohs, those of Amun were by far the most favored. The Papyrus Harris I contains records of the endowments and riches of the temples in the reign of Ramses III. Gardens and land estates are constantly mentioned in their lists. A seemingly important estate in the Delta⁵²⁶ provisioned the Theban temples with wine and olive oil, and the sherds of its wine jars were found in the magazines of the Ramesseum. Often the mention is of a generic nature, but some of the figures cast light upon the extensive properties of Amun. Of the total of 514 gardens and groves of the gods' estates,⁵²⁷ there were 433 gardens and groves⁵²⁸ for Amun of Thebes, 64 for Re',⁵²⁹ to which two gardens and one grove of olive land were added as gifts,⁵³⁰ and 5 for Ptah.⁵³¹ It has been calculated from these lists that the

real estate of Amun extended over one-tenth of the whole of Egypt, a figure that expresses a proportion similar to Amun's share in other domains of the economy.⁵³² Ramses III more than once stated that he donated gardens "equipped" with "groves and arbors (chambers-of-trees), containing date trees; lakes supplied with lotus flowers, papyrus flowers, isi flowers, the flowers of every land, dedmet flowers, myrrh, and sweet and fragrant woods for thy beautiful face."⁵³³ Elsewhere gardens were restored: "I made to grow the august grove, which was in its midst; I planted it with papyrus in the midst of the Delta marshes, (though) it has begun to decay formerly."⁵³⁴ Flowers were grown in the forecourt of the temple of Re' north of Heliopolis.⁵³⁵ No doubt the gardens that the Egyptians saw in Syria and mercilessly devastated during their military expeditions⁵³⁶ inspired their gardeners, as did the Syrian buildings the Egyptian architecture. Gardens were even planted for Amun in the southern and northern oases, manned "with gardeners from the captives of the countries."⁵³⁷ Among the various titles mentioned by Senmut, that of "Overseer of the Gardens of Amun"⁵³⁸ seems to have been particularly cherished by that prominent personage.

Private individuals have also left records concerning their gardens. These texts usually occur in connection with the paintings representing the gardens on the walls of the tombs. It is often difficult to label these gardens as funerary or house gardens. Ineny,⁵³⁹ an architect who lived during the reigns of Amenhotep I, Thutmose I-III, and Hatshepsut, describes his garden as being in the West, and his yearning "to walk in his garden of the West, cool under its sycamores, admire its grand and beautiful growths of trees, which he had made while he was on earth."⁵⁴⁰ The various trees in this garden amount to such large figures—90 sycamores, 31 perseas, 170 date palms—that it seems difficult to believe it was located in the desert of Western Thebes. I propose, following Klebs,⁵⁴¹ that it be regarded as a house garden of Ineny which he wished to enjoy also in the West; but the location of so huge a garden on the arable lands bordering the western bank could also be possible. The royal and private tomb chapels usually had some kind of landing portal near the water's edge. Funerary gardens of small size are known to have been grown in the courtyards of certain Theban private tombs,⁵⁴² probably imitating the larger gardens of pharaohs Mentuhotep, Thutmose III, and Queen Hatshepsut.

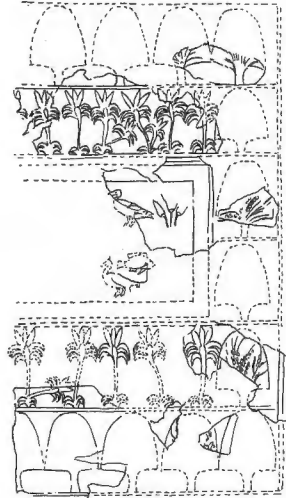
REPRESENTATIONS OF GARDENS⁵⁴³

The houses, palaces, temples, and chapels, whether funerary or private, shown in the paintings of the tombs nearly always have a garden connected to the building. Often a whole layout of an elaborate nature is detailed, and thus an adequate picture of the various types of gardens in the New Kingdom can be reconstructed from this representational evidence. Until the end of the Middle Kingdom, gardens had to be watered from water jars carried at the ends of a pole slung on the shoulders of water carriers. The primitive counterpoised sweep for elevating water (Arabic, *shaduf*), which is connected by Winlock with the invasion of the Hyksos,⁵⁴⁴ enabled a much easier irrigation of cultivated land.

GARDENS OF HOUSES

In the cities, where the value of land was prohibitive, there is no evidence of any garden being grown. Occasionally a few trees were planted along the sides of the house (Tjoy), usually date palms alternating with another species, which can also be grown in brickwork containers (house from Tomb No. 254; see fig. 2). In the harem of Pharaoh Ay a large court surrounding the structure is planted with a row of trees in mud copings, and on the farthest side a kiosk on columns supports a vine (tomb of Neferhotep).

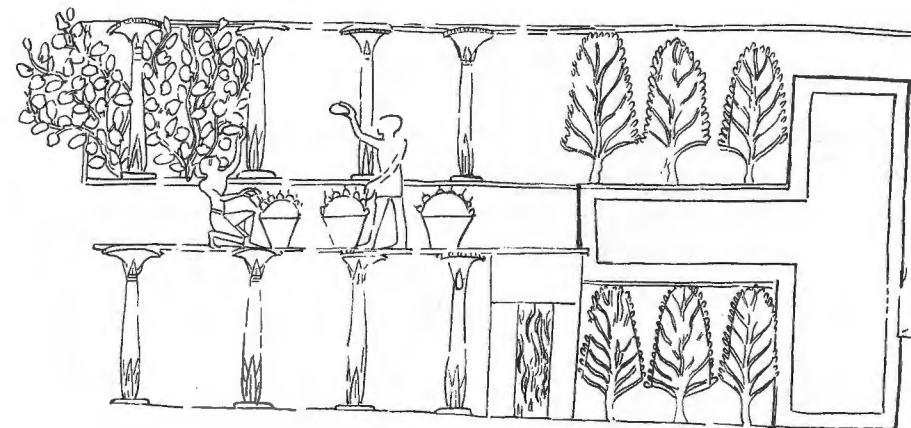
In the country, where land was cheap, the houses and palaces were set in a large garden surrounded by a wall. From the study of the numerous representations in the tombs one can picture the standard type of garden as a symmetrical layout featuring, on the main longitudinal axis, a rectangular or T-shaped pond in front of the house, surrounded by rows of trees of various species, possibly alternating in the same rows (Ineny, Kenamun, Amenemhat, Puyemre'; fig. 256). A not uncommon feature consists of a pergola bordering the main alley along the axis or surrounding the pond. Fruit trees have their leaves or branches supported on the trelliswork of the pergolas (Kenamun; fig. 257). The shortest species of trees are planted nearest the pond, while the tallest, such as doum palms and date palms, are in the rear



256. Mural representing a garden from the tomb of Puyemre' at Thebes.

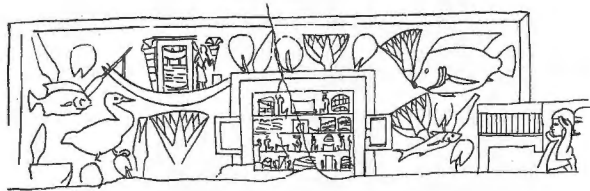
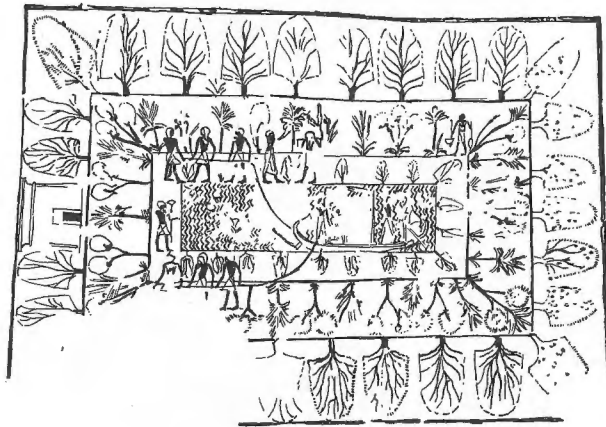
rows, an arrangement providing graded perspective about the center of the garden (Rekhmire'; fig. 258). Sometimes more than one pond is present. In the formal garden of the temple of Amenhotep II and the attached house of its attendant Sennufer at Thebes as represented in the tomb of the latter, the layout is symmetrical about an axis perpendicular to the river and running from the entrance along an alley flanked with two pergolas and leading to the small temple with three shrines.⁵⁴⁵ Each half of the garden, on either side of the alley, is divided transversely into three areas: the front one has a rectangular pond parallel to the river and is planted with water plants, date palms, and sycamores; the middle area is enclosed within a wall and is planted with light green trees, perhaps rare species; and the rearmost and largest area has again a rectangular pond bordered on one side by date palms and on the other by sycamores, and near it a small open kiosk of the type met with at 'Amarna. On either long side of the whole garden an enclosed alley is planted with trees of alternating species, while tall trees form an effective screen at the back of the estate (fig. 259).

A formal layout is also followed in the large palace gardens. The approach is symmetrical, usually with a pond on either side of the axis, bordered with rows of trees. At 'Amarna, where the ground is not arable, trees are planted in pits filled with humus and bordered with a round coping. At the



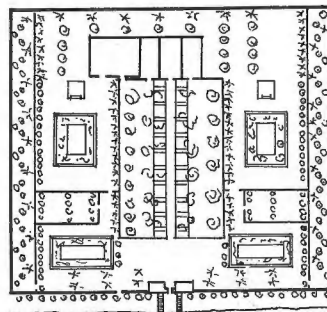
257. Murals representing gardens in the tombs of Kenamun and another, with restored perspective of the latter.

SACRED GARDENS



258. The garden of the vizier Rekhmire' from his tomb murals (upper figure), and a sacred garden for funerary rites from a tomb mural at Memphis.

259. Interpretation of the layout of the garden of Sennufer after its representation in his tomb murals.



rear of the various groups of buildings a large area is laid out as an independent garden around a square pond with sloping sides, in one corner of which a stairway descends to the bottom. A deeper basin opening in the bottom is probably filled with infiltration water. The distribution of the trees seems quite informal, however, possibly another aspect of the 'Amarna trend toward freedom and naturalism in art.

Temples and private chapels also had gardens. Processional approaches to pylons (Amenhotep Sise), or in front of the temple quay along the river (Neferhotep), are represented in the tombs. In the temple of Hatshepsut at Deir el Bahari a garden with four ponds, papyrus, flowers, and vegetables is represented schematically.⁵⁴⁶ Exotic trees were brought from the new countries subdued during the Empire and planted in the gardens of Amun. Such rare species are represented at Deir el Bahari, Medinet Habu, and Karnak, but the representations of these "botanical gardens," though fascinating on account of their innumerable exotic species, do not offer any clue regarding their layout. Private chapels were erected by rich people in their gardens at 'Amarna or on the bank of a river or canal (Ipuky), and formed an important element in the layout, being situated at the crossing of two axes or at the end of the main axis. Often the chapel stands at the rear of the enclosed garden on a higher terrace, with a rectangular pond flanked by two rows of sycamore trees (Tomb No. 329) or what seems to be two rows of tall jars (?) surrounded by climbing growth (Nakhtmin). The formal layout of the Persian garden, where an artificial pond mirrored the glittering splendor of a rich façade beyond it, had already been carried out to perfection in Egypt, at least as early as the New Kingdom.

FUNERARY GARDENS

Most of the representations of funerary gardens are schematic, reduced to a T-shaped basin shown in plan on a background of a few date palms (Neferhotep). Here the origin of the peculiar plan of the basin may be investigated. It is certain that the dead end of a canal, when shaped as a transverse rectangular basin, would facilitate the mooring and circulation of barks. On the other hand, the offering-table for the presentation of funerary offerings often assumes the shape of a T-slab, in the middle of which is a deep basin. The offering-table is obviously a model copying an artificial pond with a perpendicular arm branching off as a spout. Whether there is any relation between the funerary T-shaped pond and the offering-table is uncertain; but it is certain, even at the beginning of the New Kingdom, that the T-shaped plan had a

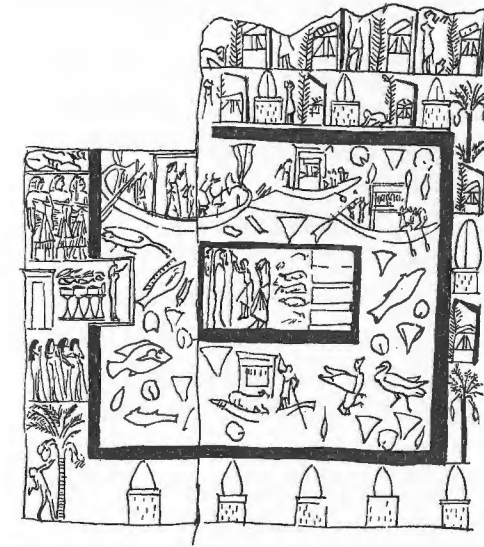
symbolic implication. There were two T-shaped ponds flanking the central alley at the bottom of the lower stairway in Hatshepsut's temple.

At least two paintings, both from Memphis (fig. 258:2), represent a funeral ceremony where the mummy is conveyed by boat to a rectangular island in the middle of a rectangular pond. In one painting the pond is bordered on three of its outer sides by a double row of funerary edicules in the shape of light awnings containing a stand which alternate with date palms and trees planted in brickwork containers (figs. 260, 261). A quay protrudes into the water from one small side of the pond, and in one painting it is accessible by a stairway. In this latter representation a quay is set at both smaller ends of the island. This could be a symbolic representation of the Osireion at Abydos or an actual copy of that sanctuary at Memphis.

The location of the funerary garden has been the subject of controversy, but it can be safely assumed that some kind of small garden was occasionally laid out in front of the tomb itself and that more often a larger garden was laid out below on the riverbank and probably also near the portal of the tomb complex.

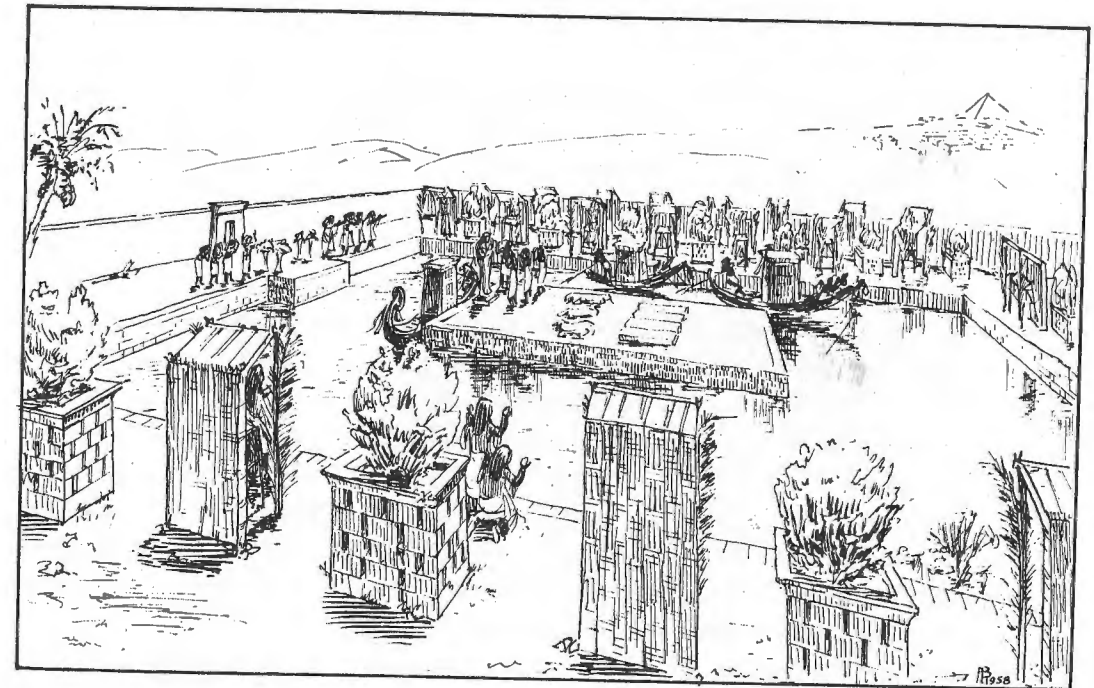
REMAINS OF GARDENS

As might be expected, the actual remains of gardens are scarce indeed, especially since the earlier excavators seldom cared to look for them. In the valley, gardens were certainly a usual feature in rural houses and estates, but they have disappeared, even before the structures themselves. Happily, the capital built by Akhenaten in the desert left, in spite of its destruction at the hands of the avengers of Amun, sufficient traces to provide material for study. Trees were planted in pits filled with black earth, and these are especially recognizable. Gardens have been found in at least three of the royal palaces at 'Amarna. In both northern and southern wings of the Harem there is a garden and a tank bordered on two sides by a columned portico with a series of small cubicles. One of the gardens is sunk at a lower level than the ground floor and forms the main element in the architectural layout of the northern Harem, located on the north side of the large columned portico and main hall (fig. 49). There is a garden adjacent to the women's quarters in the representations of the palace from the tombs (fig. 16). In the King's House, a large garden



260. Layout of a funerary garden from a Memphite tomb mural.

261. Restored perspective of the funerary garden after its representation in a Memphite tomb (cf. fig. 260).



forms the central element, laid out symmetrically about a N.-S. alley, leading from a north entrance pylon and accessible from the Bridge and from a gateway on the Royal Road. It is surrounded on three sides by the buildings of the servants, the royal living quarters, and the magazines. On its western side there are two lower terraces, one having a roofed-over arbor, probably a "chamber-of-trees" similar to the one mentioned by texts (fig. 52). Here again the garden is located on the north side of the main hall of the living quarters, probably to allow the "cool breeze" coming from the north to carry the sweet fragrance of the flowers to the royal hosts and to provide a cool shaded garden. There must have been some device in the upper stories of the building—some windows or pergola on the terrace—from which the view on the garden could be enjoyed. In the so-called North Palace, possibly a reserve for animal species and botanical garden, the main element in the plan is an extensive water court surrounded by trees. The rear central group of buildings is the formal apartment, with a private suite bordered on the north by a sunken garden surrounded on three sides by a columned portico and contiguous cells. Here again the location of the garden is to the north of the living quarters (fig. 52), and there is a corner staircase leading up to the roof of the portico, where a pergola must have afforded an enjoyable view of the precincts. The animals were kept in separate courts and rooms.

The villas of the rich inhabitants had extensive gardens where a chapel or kiosk marked the crossing of the axis through the entrance gateway with that of the house (fig. 61). Even magazine courts in the palace (fig. 52) and in the Great Temple of Aten (fig. 76) were provided with shade trees.

In the layout of mortuary temples there could also have been some provision for a processional avenue planted with trees and even a garden. In the temple of Hatshepsut at Deir el Bahari two papyrus pools on a T-shaped plan, with flower beds on both sides of each pool, flank the central alley at the bottom of the lower stairway (fig. 176).⁵⁴⁷ To the south of the temple structure at Medinet Habu, but within its general enclosure, is a T-shaped pool (fig. 96). The architect Amenhotep son of Hapu had twenty trees planted in square brick containers around the large square basin of the court of his mortuary temple (fig. 188). But in no other temple did a garden attain such an importance as in the Maru-Aten at 'Amarna. The extensive grounds of that peculiar complex, long mistaken for a "pleasure resort," are really a concrete representation of the potentiality of the sun disk Aten as a Creator; it is an outcome of

the theology propounded by Akhenaten. The layout of the eastern group of buildings is strictly axial (N.-S.) and the axis E.-W. of the large lake crosses it inside the hall of the Maru, or viewing place of the sun disk. A garden with a processional alley fronts the group on the south. Here also there is a symbolic island carrying a hypaethral kiosk, accessible from the Maru through a bridge. A second bridge at the north end leads by an alley flanked with flower beds to a water court featuring a range of eleven T-shaped water basins on an interlocking plan (fig. 127). I have interpreted the kiosk on the island as designed for the yearly festival of the viewing of the Aten, while the eleven basins of the water court would symbolically be connected with the eleven other monthly festivals.⁵⁴⁸

Although nothing can be found concerning the formal layout of gardens about the landing quays of palaces or temples, it is safe enough to consider the data indicated by paintings and drawings as being exact. Landing quays were the initial approaches to the buildings from the river, and they had to benefit as much as, if not more than, the processional avenues from the decorative effect of a formal layout. In a text from the reign of Ramses II (Bakenkhonsu) I would see a reference to such a quay wall in front of the temple at Luxor: "A wall was before it of stone over against Thebes; it was flooded; and the gardens were planted with trees."⁵⁴⁹ These are presumably the gardens on both sides of the quay walls. At least two representations of landing quays feature layouts of gardens.⁵⁵⁰

No trace of a garden has been found adjacent to the tombs, unless the purpose of the two large jars on both sides of the stairway in front of a chapel at Deir el Medina (No. 1213) was to contain trees or shrubs rather than water (fig. 219).

VIII

*The Achievement of Monumental
Architecture in the Empire*

PROGRAM

Perhaps the most characteristic features of architecture in the Empire are its functional approach and its impressive scale. When the Egyptians reoccupied the fortress at Buhen, which they had been obliged to abandon after the breakdown in the Middle Kingdom, they demolished the elements that had proved inefficient, such as the outer line of rounded bastions and the spur walls flanking the deep and narrow entrance, and instead they increased the thickness of the girdle walls and their bastions. The plan of the artisans' village at 'Amarna is a highly utilitarian design featuring, besides the adequate orientation to take full advantage of sunlight and zoning, the use of one type of housing unit in single rows to insure privacy and simple police control. Construction is also extremely functional. The artisans' village at Deir el Medina, though perhaps not designed by an architect, is nevertheless a highly practical achievement.

Although scale is not a prominent feature in these housing projects, it certainly assumes the leading role in the fortified cities of the plains such as Sesebi in the Sudan, and especially in the temples, whether they be cult temples or mortuary temples in Egypt, or cut in the rock of the cliffs in Nubia. It is a rule to separate the mortuary temple from its tomb, and to conceal it inside the western hills of Thebes. Scale and mass, which were essential to the royal pyramid in the Old Kingdom and even in the Middle Kingdom, are replaced by the skillful furrowing of a deep corridor with pits, rooms, and niches. Sometimes, however, such a corridor assumes colossal dimensions, especially in the cenotaphs at Abydos (Ahmose, Seti I). Temple palaces are

unassuming in size, being only temporary rest houses for the pharaoh, but the royal residences in Thebes are large complexes of buildings (Amenhotep III at Malqata). To the garden of such a residential palace may be appended an immense lake such as that excavated for Queen Tiy, an achievement somewhat reminiscent of the irrigation projects of Amenemhat III in the Fayum (Twelfth Dynasty; cf. Vol. II, p. 232).

The initial structure of a temple is important in itself, but it forms only a nucleus to the rambling architectural complex that results from the additions to the front by pharaohs or high priests of courts and pylons of gradually increasing size. It is through this accretion process that such large temples as those at Luxor and Karnak grew during the centuries—concrete proofs of the power of the gods and their clergy. It was natural that the elements of such extensive monuments should be of a large size, and we find columns 19.26 meters high (hypostyle hall at Karnak), pylons 65 meters long and higher than 23 meters (Luxor, Medinet Habu), and colossi of 17 meters (Ramesseum) and 23 meters (Abu Simbel), or even rock statues of about 100 meters (Gebel Barkal). Statuary is used profusely, and integrates into the structure in the form of Osiride pillars along courts and halls, and in friezes topping a rock-cut façade (Abu Simbel), not to mention the sphinxes set in two rows along the processional alleys leading to a temple.

STYLE

This concept of a monumental scale, which is comparable only to that in Hellenistic and Roman architectures, is allied to a concept of space. The choice of a mountainous background as a setting to a mortuary temple, boldly initiated by the architects of Mentuhotep (Eleventh Dynasty), is imitated with even more success by those of Hatshepsut. The traditional treatment of structures at various levels connected by causeways, known since the Old Kingdom, which developed into a series of terraces, is at its most impressive stage (temple of Hatshepsut at Deir el Bahari). Although basically the choice of the setting may be an outcome of the influence of religious symbolism that linked a forceful verticality of the terraced structure inclining heavenward against the cliff to a local cult for the pyramidal apex "El Qurn" surmounting the cirque, there is no doubt that the aesthetic aspect was coordinated so as to achieve a style in harmony with nature.

A feeling for unity pervades architectural composition and is occasionally expressed by such specific elements as the bridge linking the official palace of Akhenaten to his residence and spanning the Royal Road at 'Amarna, or the avenues of sphinxes connecting one temple to another, sometimes over great distances (2 km. connecting Luxor and Karnak). This avenue is actually an external extension of the axial approach to the shrine of the god. In the temple itself this approach is the central nave of the hypostyle hall, emphasized by its axial doorways and portals flanked by statues or obelisks forming the spine of the plan. Unity as a result of religious symbolism led to the orienting of the temples at Thebes, at least that at Luxor and that of Hatshepsut across the Nile, toward Karnak.

Flexibility in planning is obvious in the curving of the axis of the temple at Luxor to let it gradually assume a direction toward Karnak. Flexibility also led the architect of the mortuary temple of Ramses II to design it on an askew axis so that the earlier small temple of Seti I would be abutting on the hypostyle hall of the new one. A curved processional avenue was an outcome and an extension of the curved axis of a temple. We find such an avenue between the temple of Mut, passing through the central court of that of Amun-Re' and leading to that of Ptah and the northern gateway at Karnak. In the layout of the mansions at 'Amarna, unity was achieved in the alley bending along two axes at right angles, leading from the street entrance to the hypaethral chapel and thence bending to the house. In general, however, symmetry is a basic factor in the layout of the temples and housing units. Geometry is even more thoroughly sought after here than it was by the Greeks in the planning of towns or temples. This does not preclude a functional solution, especially in the plan of houses at Lahun in the Middle Kingdom, where a portico or loggia opens north or west to catch the cool breeze ('Amarna mansions); or in the King's House where a garden is laid out to the north.

A brief review of the stylistic characteristics of the monuments and their main elements, such as columns and statues, during the epoch-making reigns is revealing. Thus, with Hatshepsut the style is all rhythm and harmony; the terraced layout contributes to the scenic effect more successfully than in the nearby mortuary temple of Mentuhotep or in the tombs at Qaw. Architectural statuary is exteriorized and integrated into the structure in the shape of elegant Osiride pillars. An elegance akin to that of classical Greece is expressed by the

polygonal or fluted columns of the porticoes. Even when Thutmose III uses plant-columns or imitates tent poles in stone in his Festival Hall at Karnak the style is full of refined elegance. His two pillars decorated in high relief with the heraldic plants of the South and the North are masterpieces. The palmiform column disappears in monumental architecture, while the bundle papyriform one imitates the eight or sixteen stems of the Middle Kingdom one.⁵⁵¹ Plant-columns, mainly the papyriform,⁵⁵² are stylized under Amenhotep II but still retain the shape of the original cluster of stems (Luxor). In the temple of Amenhotep III an approach of two rows of huge open papyriform columns leads to the pylon, which forms the regular front to the typical temple.

The architectural style at 'Amarna closely expresses the profound creed in Nature propounded by Akhenaten. The openness of the style of porticoes as best exemplified by the temple of Hatshepsut is emphasized by the use of windows of appearance and loggias. This is true communion with Nature, and in the internal apartments this aspect is achieved through the layout of sunken gardens and a lavish use of floral and faunal elements such as ducks hanging from plant-cluster columns and ceilings painted with vines (coronation hall). Architecture is transformed to induce man to worship the sun disk as the creator of Nature, everywhere at home or in the sun temples or in the Maru-Aten. One of its main aspects is architectural symbolism in its most concrete calendric implications, where the double set of 365 offering-tables in the Gem-Aten would serve for the daily offering ritual at sunrise and at sunset; and the eleven basins of the water court and the kiosk in the Maru-Aten would serve for the monthly festivals of the Aten. New elements appear for the first time: the broken lintel, the pylon with vertical faces, and the open façade consisting of pillars and low screen walls, perhaps taken over from the peripteral temple, not to mention the sunken gardens. Some elements have a strange Mesopotamian connotation, such as the two ramps across the doorways, the pillared square coronation hall akin to the later apadana of the Persians, and the window of appearance across the Royal Street which reminds us of the later bridge from the gate to the ziqurrat at Kar Tukulti Ninurta, or of that between the palace of Sargon and the temple of Nabu at Khorsabad.

Beginning with the style of 'Amarna, the proportions of the columns deteriorate, and the shafts are overburdened with alien elements such as ducks, and panels and details of decoration.⁵⁵³ Toward the middle of the Nineteenth Dynasty the shaft is of circular cross section. The polygonal type disappears

and the colossal open papyriform column is almost exclusively used to border the nave of the hypostyle hall.⁵⁵⁴ The shaft is thickened into a cylinder with entasis and is carved in low relief. Porticoes with intercolumnar screen walls stretch at the rear of the court of the temples.⁵⁵⁵

The external walls of the temples are decorated with low relief of a functional purport, historical or funerary.⁵⁵⁶ The types of carving technique are the sunk relief outside and the raised low relief inside; but under the Ramessids, beginning with Ramses II, both types are irrationally used inside with disconcerting effects. The sunk relief, which reacts strongly in the bright sunlight, is meaningless and ugly in the shade.

This is the period of the great harmonic plans of the temple of Seti I and his impressive cenotaph at Abydos, the latter being a clear architectural crystallization of a cosmic symbolism. Proportions in both monuments are massive, but the low relief in the temple, though of an excellent quality, does not reach the freshness of the earlier New Kingdom.⁵⁵⁷ A bold dramatic rendering of narration in huge compositions without registers is attempted in Karnak (Battle of Qadesh).⁵⁵⁸

Ramses II is certainly the greatest builder among the pharaohs. It can be said that architectural statuary reaches its apex in this reign, for colossi assume a prominent place in the temple and also in front of the pylon. Obelisks are also favorites of this ruler. The style is characterized by its expression of strength and power through the massive proportions of the Osiride pillars, the overwhelming impression of the colossi and obelisks, and the strong shadows of the deep sunk relief. As if this aggressive use of the colossal scale and deep carving were not sufficient, artists invent illusionistic decoration (Tanis) to emphasize perspective. Narrative scenes become more stereotyped during the long reign of Ramses II,⁵⁵⁹ though often very extensive with hundreds of figures in violent movement.

Ramses III imitates the achievement of Ramses II in his mortuary temple at Medinet Habu, with two fortified gateways, possibly featuring Syrian influences, and a resurgence of optical illusionism. This illusionistic style aimed at replacing real scale by a larger faked one, by inventing faked elements, and by placing low-relief scenes in inverted order, the larger registers being the closest down. Such mannerisms in architectural design, preceding by twenty-seven centuries those of Michelangelo in the Campidoglio in Rome, are a sure sign of decline. The deformed Osiride statues and the debased proportions of the

colossi of the temple at Medinet Habu are the concrete result of an artificiality that appeared earlier at Karnak, even to pervade the legends of wall scenes where Amun's thanks to Seti I contain puns on the names of Pylon II: "My son Seti, my heart is happy with your monument in Waset. I am pleased that you have made my heart *joyous*, . . . that you have *illuminated* *ḥpet-iswt* with eternal work." The Second Pylon was called "Amun-is-in-Joy" and "The Splendid Doorways illuminating Waset of Amun-Re."⁵⁶⁰ Although some of the religious scenes may have plagiarized those in the Ramesseum the narrative ones bristle with life and three-dimensional rendering achieved through the interrelated gestures of the figures in the superimposed rows.

The influence of painting is prominent in the evolution of low relief. Color, which began to be used on flat walls instead of low relief in the Middle Kingdom, is now applied on pavements to imitate ponds with fish and aquatic plants, on ceilings as rows of vultures alternating with cartouches and as chessboard patterns. Scenes of the Netherworld cover almost exclusively the walls of the royal tombs, and appear mixed with scenes of daily life in private tombs. New types of friezes of uraei alternating with Hathor heads and cartouches in temples, or floral garlands in houses run beneath the ceiling.⁵⁶¹ The medium is cheap enough to be used by artisans in the decoration of their houses and tombs (Deir el Medina). The painting technique occasionally resembles the fresco finished with tempera (palace at Malqata). The style admits of grading and expressionistic touches. In Ramesside times painting declines, featuring a sketchy design in black outlines.

CONSTRUCTION

Construction attains its greatest efficiency in the 'Amarna Period, perhaps as a result of financial restrictions. Concrete, a rapid and easy-to-handle material, is poured in the foundation trenches of the desert soil, upon which walls are built in one-brick and half-a-brick thicknesses. L-shaped partitions abut transversely on an enclosure wall to form the contiguous houses in the artisans' village. For the first time pointed arches and vaults are evidenced (Esna).

Massive construction more in line with pre-'Amarna tradition is used in the mortuary temples of Ramses II and Ramses III, however, even in such

secondary utilitarian structures as the administration outbuildings. Stylobates form a solid base to temples or sometimes even to mansions.⁵⁶²

Materials are in general poorer than those used in the Old Kingdom, and sandstone from Gebel Silsila and even brick and wood are used in the temples. Except for the monoliths of Thutmose III columns are built in drums. This economy in monumental architecture is oddly coupled with the use of gold and electrum sheets applied as a lining to walls, pyramidions, obelisks, flag-staffs, doors, and pavements (hypostyle hall at Karnak); and colored ceramic inlays as a versatile decorative medium were favored in palace ornamentation where they were sometimes replaced by stuccoed wood or mud molded and painted (palace at Malqata). Many of the royal commissions must have been carried out in haste, especially those of Ramses II, for inscriptions were misplaced and subsequently emended (Abu Simbel), and faults in the bedrock colossi were filled in with plaster and carved without further ado.

*HARMONIC ARCHITECTURAL DESIGN*⁵⁶³

Whether treated in the elegant style of the early Eighteenth Dynasty at Thebes and Abydos, or on the coarser styles of the Egyptian settlements in Nubia ('Amada, Sesebi), and those at the end of the Empire, monumental architecture shows a consistent use of the harmonic system of design. Plans and elevations are still regulated by the Golden Ratio so that their components in the shapes of squares and 8:5 isosceles triangles feature a harmonic sequence embodied into a harmonic whole. Most of the plans that I have analyzed conform to the system, even to featuring a sequence of dimensions in cubits marked by significant points along the longitudinal axis which conforms to the consecutive numbers of the Fibonacci summation series.

Proof of the theory of harmonic design is afforded, though in two different ways, in the plans of the two sanctuaries at 'Amarna, and in that of the temple of Seti I at Abydos. The harmonic system of the two 'Amarna sanctuaries is identical, even to the dimensions of the squares that form their constructional diagrams. These squares determine the basic outline of the various elements of the design, and the dimensions of their sides in cubits conform to the numbers of a summation series 13, 21, 34, 55, 89, 144. Numerical symbolism is also found in the layout of rows of offering-tables set in the

courts of the Great Temple at 'Amarna.⁵⁶⁴ The plan of the irregular temple of Seti I at Abydos features the unique shift of the rear portion to one side abutting on the main body. Its harmonic analysis reveals, however, that this shift conforms to the system, for the basic harmonic triangles are interrelated along continuous straight lines, connecting the lateral complex with the scheme of the main body of the plan.

What was the presumed purpose of harmonic design in Egyptian architecture? Was it aesthetic? The fact that in most cases the aesthetic effect, especially in the hypostyle hall crowded with columns, could not be perceived in perspective suggests that a conceptual interpretation, even if not perceivable, was aimed at. The use of the actual numbers of the summation series as dimensions in cubits in some of the plans seems to imply that they contributed a symbolic value of their own, possibly as a connotation of "eternity" immanent in the series itself. This same concept is perhaps rendered graphically through the "prismatic triangle" which forms a skeleton framework along the axis of the plan of any temple and which features a series of squares interpreting the contiguous elements of this plan, decreasing in size from the pylon inner alignment upon which it stands toward the sanctuary. Actually, such a prismatic triangle could well have been pictured by the Egyptians as a rabatment to be rendered in space as a prism whose apex points just above the ultimate square of the sanctuary proper toward heaven, or eternity, a crystallization of the Egyptian religious concept interpreting the sanctuary as "the abode of god, heaven."

The harmonic system is evidenced during the Empire for plans of temples, palaces, chapels, tombs, and even towns ('Amarna East). It is also apparent in the very few elevations extant, such as that of a peripteral chapel of the Eighteenth Dynasty at Elephantine.

Thus, it seems that here also a basic pursuit of function by the Egyptian artist leads concurrently to beauty.

* * * * *

During this relatively short period of five centuries (1580-1085 B.C.), when Egypt reached the apex of its rise as the world power, architecture experienced its hardest times. Although it reappeared from the chaos of the Second Intermediate Period in all the prime freshness and elegant simplicity that asserted its indubitable filiation from the "classicist" trends of the Middle Kingdom, it was soon submerged by the requirements of a "nouveau riche"

society, emphasizing scale, massiveness, and glittering materials.

The interlude of the Aten (1369-1354 B.C.) brought in an interpretation of truth conspicuous for its vigorous originality in function of sunlight and utilitarian purpose in architecture, profuse plant and animal motifs of a rather poor taste in modeled ornament, and realism in architectural statuary.

This short-lived recession from tradition had its lingering reactions in the post-Amarna architecture, however, which, deprived of its genial inspiration, could only decline under the Ramessids (1314-1085 B.C.) in both style and construction. Style, becoming increasingly estranged from nature, stumbled into a massive artificiality that occasionally sparkled with mannerism. Construction could not maintain its excellence against the harrassing requirements of too many commissions to be carried out in an expanding Egypt in too short a time.

Yet tradition was not dead and, happily for Egyptian architecture and other disciplines of art, it revived to control both monumental and private programs. As will be shown in the next volume of this work the decline that had seeped into Ramesside architecture was checked under the Later dynasties, one of which, called Saite (Twenty-Sixth Dynasty, 663-525 B.C.), sought inspiration, albeit more servile than imaginative, in the art of the Old Kingdom.

Architecture proved to be the art that resisted decline best, surviving the chaos brought in by foreign invasions of Persians (525-404, 341-333 B.C.) and Macedonians, to reemerge during the Ptolemaic Dynasty (304-30 B.C.) and even to prosper under the Roman domination, true to its norms, profoundly Egyptian and occasionally inventive even though burdened with relief in a debased style. It was this unwavering truthfulness of monumental architecture to its tradition in design that allowed it to continue as a creative admirable discipline long after the other arts had foundered in the Hellenistic deluge and well into the alien environment of Christianity.

Notes

Abbreviations

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Notes

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2. Winlock, *Middle Kingdom in Thebes*, pp. 150-170, pls. 22-32.
3. J. Wilson, *The Culture of Ancient Egypt*, (Chicago, 1958), p. 161, n. 10, does not agree with this surmise.
4. Drioton-Vandier, *L'Égypte*, pp. 453-474.
5. Breasted, *A.R.*, II, #978.
6. Drioton-Vandier, *L'Égypte*, p. 472.
7. Breasted, *A.R.*, II, #991 ff.
8. *Ibid.*, III, #170.
9. *Ibid.*, IV, #410.
10. Alexandre Badawy, "Politique et Architecture dans l'Égypte Pharaonique," *Chronique d'Égypte*, XXXIII/66 (1958), pp. 171-181.
11. Breasted, *A.R.*, II, #867.
12. G. Posener, *Littérature et Politique dans l'Égypte de la XII. Dynastie* (Paris, 1956), chap. ii.
13. Breasted, *A.R.*, IV, #416 ff.
14. *Ibid.*, III, #307; IV, #117.
15. H. Frankfort, *The Art and Architecture of the Ancient Orient* (Baltimore, 1954), p. 146, fig. 67.
16. *Ibid.*, p. 148, pl. 141.
17. *Ibid.*, p. 150, fig. 68.
18. *Ibid.*, p. 152, fig. 70.
19. *Ibid.*, p. 153 ff.
20. Breasted, *A.R.*, II, #292.
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22. Hölscher, *Medinet Habu*, III, 37; Breasted, *A.R.*, IV, #192.
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26. *Ibid.*, p. 73.
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30. *Ibid.*, I, #755.
31. *Ibid.*, III, #584.
32. *Ibid.*, IV, #363.
33. *Ibid.*, IV, #386.
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35. *Ibid.*, III, #625.
36. C. Nims, "Places about Thebes," *J.N.E.S.*, XIV (1955), 117, referring to H. Ricke, *A.Z.*, LXXIII (1937), 124-131. See now C. Nims, *Thebes of the Pharaohs* (London, 1965).
37. Breasted, *A.R.*, IV, #489, and p. 238, n.c.
38. *Ibid.*, II, #342.
39. Caminos, *op. cit.*, pp. 164-165, 410-411.
40. *Ibid.*
41. Badawy, *Dessin Architectural*, pp. 75-115. N. de G. Davies, *The Townhouse in Ancient Egypt*, Metropolitan Museum Studies Vol. I/2 (New York, 1929), pp. 233-255.
42. Badawy, *Dessin Architectural*, pp. 132-134.
43. Erman-Blackman, *Literature*, p. 178.
44. *Ibid.*, p. 163.
45. S. Clarke and R. Engelbach, *Ancient Egyptian Masonry* (Oxford, 1930), pp. 173-175, figs. 206-207.
46. Hölscher, *Medinet Habu*, II, 81-82, fig. 71.
47. *Ibid.*, III, pp. 77-78, figs. 52-53.
48. W. Fl. Petrie, *Six Temples at Thebes* (London, 1897), pl. XXV; U. Hölscher,

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49. B. Bruyère, *Deir el Médineh (1935-1940)*, (Cairo, 1943), Part I, pp. 72-79, 85-89, fig. 36 bis, pl. 3.
50. Hölscher, *Medinet Habu*, III, 44-48.
51. H. Ricke, *Der Grundriss des Amarna-Wohnhauses* (Leipzig, 1932), pp. 65-68, figs. 59-60.
52. Badawy, *Maison*, p. 40, fig. 29.
53. Hölscher, *op. cit.*, III, pp. 49-59. Ricke, *op. cit.*, fig. 59.
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56. Smith, *op. cit.*, p. 163.
57. Badawy, *Maison*, pp. 38-39, fig. 26.
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64. E. Egli, *Geschichte des Städtebaues* (Zürich, 1959), pp. 41-42, fig. 10.
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69. Hölscher, *op. cit.*, II, 68-72, figs. 54-60.
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88. *Ibid.* I, 1; II, pl. I.
89. Fairman, *op. cit.*, pp. 36-41, figs. 1, 5, 15.
90. Smith, *Art of Egypt*, p. 189.
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123. *Ibid.*, pp. 106-111, pl. XVIII.
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 151. *Ibid.*, I, 113.
 152. *Ibid.*, I, 112; III, 60.
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514. A different interpretation of these texts is given by Wilson, *op. cit.*, pp. 223-224, where Akhenaten is a "god-king;" but see Drioton-Vandier, *L'Égypte*, pp. 344-346.
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Hieroglyphic Lexicographical Evidence

SELECTION OF ARCHITECTURAL TERMS OF THE NEW KINGDOM

(This selection complements that of terms of the Middle Kingdom, most of which were still in use with slight variation in the New Kingdom; see vol. II, pp. 257-60).

DOMESTIC ARCHITECTURE

<i>twyt</i>		street, town quarter	<i>hry</i>		ground floor (lit. lower house)
<i>ipt</i>		harem (lit. censored), Luxor (lit. harem [of Amun])	<i>ch</i>		arsenal (lit. house of weapons)
<i>imsw</i>		tent (hence, house, office)	<i>mw</i>		sighting pavilion (lit. house of sighting; cf. Arabic <i>manzara</i>)
<i>is</i>		workshop	<i>ms</i>		mammisi, birthhouse (lit. house of birth)
<i>ist</i>		palace, god's-dwelling	<i>mdt</i>		archive, library (lit. house of documents)
<i>isbt</i>		chair, throne, throne canopy, pedestal	<i>n nbw</i>		sarcophagus chamber in royal tomb (lit. house of gold)
<i>ct</i>		room (see vol. II, p. 257)	<i>nfr</i>		embalming house (lit. good house)
<i>nt ht</i>		arbor, nursery (lit. chamber of trees)	<i>mnjwi</i>		harbor (lit. mooring [place])
<i>crrjt</i>		hall of palace, of court of justice	<i>mnkb</i>		cool room, royal palace (lit. cool [place])
<i>rrt</i>		loft	<i>mrri</i>		street, quarter
<i>cht</i>		palace (dungeon)	<i>nwt</i>		village, town
<i>chnwtj</i>		royal apartment in palace	<i>mw</i>		new town
<i>wthj</i>		reception hall of palace	<i>nfrw</i>		rear-most room in Theban royal palace or tomb (lit. innermost [place])
<i>whrt</i>		dockyard, carpenter's yard	<i>rs-hd</i>		treasury
<i>wsh</i>		hall in palace, in temple (lit. broad)	<i>hsmw</i>		aviary (lit. [place of] birds)
<i>wd</i>		boundary stone, stela, memorial stone (lit. order)			
<i>pr</i>		house (see vol. II, p. 257)			

hwot mansion, castle
nbw goldsmith's workshop
 (lit. mansion of gold)
hmt workshop (lit. artisans'
 [place])
hsw street, alley (cf.
 Arabic *hāra*)
hndw stair, throne (from
hnd to step)
hn tent (from *hn*
 animal's hide)
sdrt hall of columns
 (Semitic)

šmy granary (lit.
 passageway)
šmmt stall, granary, caisson
 (lit. ambulatory)
šwt granary
hnb corner, court of justice
ts-rd ramp, stairway (lit.
 earth stair)
tp-hwt roof (lit. top of
 mansion)
đbt palace, shrine

RELIGIOUS ARCHITECTURE

hht sanctuary (lit.
 luminous mountain
 horizon)
hwmyt pillared hall or court
 (lit. [place of]
 pillars)
wđjt hypostyle hall in
 temple (lit. [place
 of] papyriform
 columns)
wcbt shrine, embalming
 laboratory, service
 room (lit. pure
 [place])
wbs forecourt of temple
 with obelisks, colossi
 (lit. opener)
wbsjt benben stela in
 Heliopolis,
 pyramidion
bhnt pylon, gate (Semitic)
mjt rhnt avenue of rams,
 dromos
mšhnt resting place of a god,
 temple (lit. [place
 of] rest)
rs-pr temple, temple district,
 false-door, chapel

rjd terrace with columned
 portico in front of
 hypostyle (cf. *rwđ*
 stair)
hwot hbw-sd castles of the jubilee
 festivals
hby feast hall in temple
 (from *hbj* to be
 festive)
wsh feast court
hrt-ib mid hall in temple or
 royal tomb (lit.
 mid [place])
šhm sanctuary (misreading
 from *hm*)
hntw temple, tomb, house
 (lit. resting [place])
št-wrt sanctuary of temple
 (lit. great place)
šm image
šwt palace, shrine
shnt scaling pole of festival
 of Min and Amun
šmt corridor with statues
 (from *šm* to walk)
krj chapel
gjt portable shrine
tw colossus (lit. large
 statue)
đđ building in front of
 temple (lit. at the
 head)
đđswt courses in girdle wall
 (lit. headers)

FUNERARY ARCHITECTURE

isk waiting (hall) [part of
 royal tomb before
 sarcophagus
 chamber]
igr netherworld,
 necropolis
chsw stela (from *chr* to
 stand)
chct tomb (cf. *mchct*)

hnt tomb (lit. resting
 [place])
hr (Theban) necropolis,
 tomb
šps funerary stela (lit.
 august)
đrjt sarcophagus (lit.
 excellent)

MILITARY ARCHITECTURE

inb wall, fortified wall,
 girdle wall
inbt fortress, stockade
ith prison (from *ith* to
 drag)
wmt girdle wall (lit. thick,
 massive)
wš guard house (from
wš to guard)
bhn castle, citadel, tower
mktr migdol (Semitic)
nhw fortress, settlement of
 war prisoners (lit.
 strong)

hbm lock, fortress, frontier
 post (from *hbm* to
 seal)
šnb battlement
šbtj girdle wall,
 fortification
šrw, šr frontier post against
 Asia (Sile)
šrt fort
špg barracks
šmt part of girdle wall
 (cf. *šmt* bitch)

ARCHITECTURAL ELEMENTS

irkt tree trunk, beam
cr column
cr door leaf, door
cr stair (from *cr* to
 ascend)
crjt lintel
crwt gate
crwt gate
wđ papyriform column
 (from *wđ* papyrus)
wmt doorjamb (from *wmt*
 to be thick,
 thickness)
wn aperture of doorway
 (from *wn* to open)
wrjt door posts
wrmt roof (from arbor)

wrnš posts
wšj slot window (from
wšj to saw)
bbt niche (lit. cavity)
bnš door post of wood,
 stone
p socle
pnrjt lock (from *pnr* to turn
 round)
nmr to line with fine stone
 (lit. to dress)
nhbtw lotiform column (from
nhbt lotus bud)
nst part of brick ramp
 (from *ns* tongue?)
rw gate door (lit. out[let])
hrjt kiln
hwsj to pave, build (lit.
 to ram)

<i>sb</i>		gate, door	<i>trj</i>		door
<i>sbht</i>		gate, palace (from <i>sbht</i> to enclose)	<i>trr</i>		baker's oven
<i>smkt</i>		long cedar balk	<i>dbt</i>		brick (lit. block [of clay])
<i>smdt</i>		smooth plank, balk			
<i>kspw</i>		timber or stone roof (from <i>ksp</i> to conceal, cover)			

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